



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO23216**

Purchase Order Date 3/4/2014

PO Print Date 3/6/2014

Page Number 1 of 18

Order From :

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

VU-BEA001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

M128537
M128537

Contact Name

Vendor Phone 305-925-2600

Ship To Contact

Ship To Phone

Ship Via: FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	MS21209-F615	Heli-Coil	3/12/2014 Yes 3/12/2014		200.00 Each	\$0.32	\$64.00
Line Total:							\$64.00
2	MS27039C1-08	SCREW	3/12/2014 Yes 3/12/2014		600.00 Each	\$0.33	\$198.00
Line Total:							\$198.00
3	MS21042L08	Nut	3/12/2014 Yes 3/12/2014	FN	2,000.00 Each	\$0.27	\$540.00

Note:

3/6/2014



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Order From :

VU-BEA001

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

305-925-2600

Ship To Contact

Ship To Phone

Ship Via:

FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total:

\$540.00

4 212-12

Receptacles

3/12/2014 FN

150.00 ✓

\$2.50

\$375.00 ✓

Yes

Each

3/12/2014

Line Total:

\$375.00

5 AN526C832R9

Screw

3/12/2014 FN

600.00 ✓

\$0.12

\$72.00 ✓

Yes

Each

3/12/2014

Line Total:

\$72.00

6 MS21075L3N

NUT PLATE

3/12/2014

1,000.00 ✓

\$0.35

\$350.00 ✓

No

Each

3/12/2014

Line Total:

\$350.00

Note:

3/6/2014

8014-3-10



Dart Aerospace Ltd.
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Terms

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FOB

FCA - (Free Carrier)

11	AN310-4	Nut	3/12/2014	FN	25.00	\$0.65	\$16.25
			Yes		Each		
			3/12/2014				

342

Line Total: \$16.25

12	AN310C3	Castellated Nut	3/12/2014		20.00	\$0.97	\$19.39
			Yes		Each		
			3/12/2014				

342

Line Total: \$19.39

13	AN310C4	Nut	3/12/2014		50.00	\$0.98	\$49.00
			Yes		Each		
			3/12/2014				

342

rec'd

Line Total: \$49.00

14	AN3-14A	Bolt	3/12/2014	FN	50.00	\$0.30	\$15.00
			Yes		Each		
			3/12/2014				

351

Note:

3/6/2014

SP 14-3-10



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Ship To Phone

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Buyer

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10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total: \$15.00

15 AN3-15A

Bolt

3/12/2014 FN

50.00

Yes

3/12/2014

Each

\$0.30

\$15.00

Line Total: \$15.00

16 AN3-3A

Bolt

3/12/2014 FN

250.00

Yes

3/12/2014

Each

\$0.09

\$22.50

Line Total: \$22.50

17 AN3-4A

Bolt

3/12/2014 FN

100.00

Yes

3/12/2014

Each

\$0.15

\$15.00

Line Total: \$15.00

Note:

3/6/2014

8014-3-10



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FOB

FCA - (Free Carrier)

18	AN3C16A	BOLT	3/12/2014 Yes 3/12/2014	30.00 Each	\$0.60	\$18.00 ✓
						Line Total: \$18.00
19	AN4-11 ✓	Bolt	3/12/2014 Yes 3/12/2014	200.00 ✓ Each	\$0.55	\$110.00 ✓
						Line Total: \$110.00
21	AN4-14A	Bolt	3/12/2014 FN Yes 3/12/2014	200.00 ✓ Each	\$0.22	\$44.00 ✓
						Line Total: \$44.00
22	AN4-20A	Bolt	3/12/2014 FN Yes 3/12/2014	250.00 ✓ Each	\$0.30	\$75.00 ✓

Note:

3/6/2014

88 14-3-10



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Ship Acct:

Buyer

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Customer POID

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10127-2607

Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total: \$75.00

23 AN4C13A

BOLT

3/12/2014

Yes

3/12/2014

250.00

Each

\$0.75

\$187.50

Line Total: \$187.50

24 AN4C20A

Bolt

3/12/2014

Yes

3/12/2014

25.00

Each

\$1.20

\$30.00

Line Total: \$30.00

25 AN507-1032R15

Screw

3/12/2014

Yes

3/12/2014

100.00

Each

\$0.50

\$50.00

Line Total: \$50.00

Note:

3/6/2014



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Ship To Phone

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Ship Acct:

Buyer

Chantal Lavoie

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Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB FCA - (Free Carrier)

26	AN507-1032R12	Screw	3/12/2014	100.00	\$0.15	\$15.00
			Yes	Each		
	MS24693-S274 ACCEPTABLE		3/12/2014			

Line Total: \$15.00

27	AN525-10R7	SCREW	3/12/2014	750.00	\$0.10	\$75.00
			Yes	Each		
			3/12/2014			

Line Total: \$75.00

29	AN5C15A	Bolt	3/12/2014	50.00	\$3.45	\$172.50
			Yes	Each		
			3/12/2014			

Line Total: \$172.50

30	AN833-6D	Elbow, Bulkhead-M-Flare	3/12/2014	5.00	\$9.25	\$46.25
			Yes	Each		
			3/12/2014			

Note:

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Terms

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Currency

USD

FOB

FCA - (Free Carrier)

					Line Total:	\$46.25	
31	AN924-6D	Nut	3/12/2014 FN	25.00	✓	\$0.95	\$23.75 ✓
				Yes			
				3/12/2014			
					Line Total:	\$23.75	
32	CCR264SS-3-06	Rivet	3/12/2014 FN	100.00	✓	\$0.20	\$20.00 ✓
				Yes			
				3/12/2014			
					Line Total:	\$20.00	
33	CR3212-5-07	Rivet	3/12/2014	100.00	✓	\$0.75	\$75.00 ✓
				Yes			
				3/12/2014			
					Line Total:	\$75.00	

Note:

3/6/2014

88 14-3-10



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FOB

FCA - (Free Carrier)

34	CR3213-4-04	Rivet	3/12/2014 Yes 3/12/2014	100.00 Each	✓	\$0.35	\$35.00 ✓	
							Line Total:	\$35.00
35	CR3213-4-6	Rivet	3/12/2014 FN Yes 3/12/2014	200.00 Each	✓	\$0.50	\$100.00 ✓	
							Line Total:	\$100.00
36	HL20PB5-8	Rivet	3/12/2014 No 3/12/2014	10.00 Each	✓	\$1.50	\$15.00 ✓	
							Line Total:	\$15.00
37	MS16997-24	SCREW	3/12/2014 Yes 3/12/2014	2.00 Each	✓	\$7.50	\$15.00	

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3/6/2014



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Terms

Net 30

Currency

USD

FOB

FCA - (Free Carrier)

Line Total: \$15.00

38	MS17984-C413	Quick Release Pin	3/12/2014	FN	25.00	\$18.00	\$450.00
			Yes		Each		
			3/12/2014				

Line Total: \$450.00

39	MS20600-AD4W4	Rivets	3/12/2014		1,500.00	\$0.26	\$390.00
			Yes		Each		
			3/12/2014				

Line Total: \$390.00

40	MS20600-AD4W5	Blind Rivet	3/12/2014	FN	250.00	\$0.17	\$42.50
			Yes		Each		
			3/12/2014				

Line Total: \$42.50

Note:

3/6/2014



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Currency

USD

FOB

FCA - (Free Carrier)

41	MS20601-AD4W8	RIVET	3/12/2014 Yes 3/12/2014	200.00 Each	✓	\$0.25	\$50.00	✓
							Line Total:	\$50.00
42	MS20615-4M18 ✓	Rivet	3/12/2014 Yes 3/12/2014	250.00 Each	✓	\$0.45	\$112.50	✓
							Line Total:	\$112.50
43	MS21043-4	Nut	3/12/2014 Yes 3/12/2014	500.00 Each	✓	\$0.55	\$275.00	✓
							Line Total:	\$275.00
44	MS21044-N08	Nut	3/12/2014 Yes 3/12/2014	100.00 Each	✓	\$0.15	\$15.00	✓

Note:

3/6/2014

SP14-3-10



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Chantal Lavoie

Customer POID

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10127-2607

Terms

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Currency

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FOB

FCA - (Free Carrier)

45 MS21069L3

ANCHOR NUT

3/12/2014

Yes

3/12/2014

50.00 ✓

Each

\$0.35

\$17.50 ✓

Line Total:

\$15.00

46 MS21075L08N

Nut Plate

3/12/2014

Yes

3/12/2014

100.00 ✓

Each

\$0.38

\$38.00 ✓

Line Total:

\$17.50

47 MS21209-F415

Heli-Coil

3/12/2014

Yes

3/12/2014

20.00

Each

\$0.75

\$15.00

Line Total:

\$38.00

Line Total:

\$15.00

Note:

3/6/2014



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FCA - (Free Carrier)

48	MS21250-03004	HIGH STEEL BOLT	3/12/2014	15.00	\$2.50	\$37.50
			Yes	Each		
			3/12/2014			

Line Total: \$37.50

49	MS21920-20	Clamp	3/12/2014	75.00	\$7.50	\$562.50
			Yes	Each		
			3/12/2014			

Line Total: \$562.50

50	MS24693-C48	SCREW	3/12/2014	300.00	\$0.05	\$15.00
			Yes	Each		
			3/12/2014			

Line Total: \$15.00

51	MS27039-1-16	Screw	3/12/2014	200.00	\$0.15	\$30.00
			Yes	Each		
			3/12/2014			

Note:

3/6/2014



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Terms Net 30

Currency USD

FOB FCA - (Free Carrier)

Line Total: \$30.00

52 MS27039-4-11

Screw

3/12/2014

20.00 ✓

\$1.50

\$30.00 ✓

Yes

Each

3/12/2014

309.

Line Total: \$30.00

53 MS27039C4-08

SCREW

3/12/2014

100.00 ✓

\$0.80

\$80.00 ✓

Yes

Each

3/12/2014

309

Line Total: \$80.00

54 MS35206-217

SCREW

3/12/2014

10.00 ✓

\$1.50

\$15.00

Yes

Each

3/12/2014

288

Line Total: \$15.00

Note:

8814-3-10

3/6/2014



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FCA - (Free Carrier)

55	NAS1149C0532R	WASHER	3/12/2014	500.00	\$0.03	\$15.00
			Yes	Each		
			3/12/2014			

Line Total: \$15.00

56	NAS1149D0363J	Washer	3/12/2014 FN	5,000.00	\$0.02	\$100.00
			Yes	Each		
			3/12/2014			

Line Total: \$100.00

57	NAS1149DN832J	Washer	3/12/2014 FN	1,000.00	\$0.02	\$20.00
			Yes	Each		
			3/12/2014			

Line Total: \$20.00

58	NAS1149DN949J	Washer	3/12/2014 FN	100.00	\$0.15	\$15.00
			Yes	Each		
			3/12/2014			

Note:

3/6/2014



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Net 30

Currency

USD

FOB

FCA - (Free Carrier)

59 NAS1149F0432P

WASHER

3/12/2014 FN

Yes

3/12/2014

2,000.00

Each

Line Total:

\$15.00

\$0.02

\$40.00

60 NAS509-12C

Nuts

3/12/2014

Yes

3/12/2014

15.00

Each

Line Total:

\$40.00

\$16.50

\$247.50

61 NAS509-6C

Nut

3/12/2014 FN

Yes

3/12/2014

10.00

Each

Line Total:

\$247.50

\$5.50

\$55.00

Line Total:

\$55.00

Note:

3/6/2014



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO23216

Purchase Order Date 3/4/2014

PO Print Date 3/6/2014

Page Number 18 of 18

Order From :

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

VU-BEA001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 305-925-2600

Ship To Contact

Ship To Phone

Ship Via: FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB

FCA - (Free Carrier)

62	NAS77A5-025	Bushing	3/12/2014	5.00	\$5.00	\$25.00
			Yes	Each		
			3/12/2014			

277

Line Total: \$25.00

63	71401-45	PROCUREMENT QUALITY CLAUSES	3/12/2014	1.00	\$0.00	\$0.00
			No	Each		
			3/12/2014			

Procurement Quality Clauses
A005 RIGHT OF ENTRY
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A013 SHELF LIFE CONTROLLED MATERIAL 80%,
REQUIRED AT RECEIPT
A016 PERSONNEL QUALIFICATION
A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT
A033 STATEMENT OF CONFORMITY/TEST RECORDS
FOR NAS, AN and MS FASTENERS
A041 QUALITY MANAGEMENT SYSTEM
A043 RETENTION OF QUALITY DOCUMENTS

Line Total: \$0.00

PO Total: \$5,640.07

CZMB

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 4

Change Date: 3/6/2014

Emhart Technologies LLC

Shelter Rock Lane
Danbury CT 06810

()

Fax: ()

EMHART
TEKNOLOGIES

SHIPPER/PACKING LIST

SID NUMBER

DATE

2103570

05/22/12

Page: 1

S B/E Aerospace Consumables Mgmt.

O P.O. Box 025263

L Miami FL 33102-5263

D

T
O

S B/E Aerospace, Inc.

H 9835 NW 14th Street

I Miami FL 33172

P

T

O

Affix Pro/Tracking No. To Order

Danbury, CT

Freight Collect

0331-0149-0

Fedex Ground Inc.

0FTE35

422251

QUANTITY
SHIPPED

40000.000

3591-4CN375

65.2000

INS H-C 1/4-28UNF S/L 58
MS21209-F4-15
Lot 588326

070

PS# 1345094

FRT CLASS

070

Class 70

DESCRIPTION

NO OF CK

NO OF UNITS

= TOTAL NO. OF CONTAINERS

SHIPPER

EMHART
TEKNOLOGIES

PER

PERMANENT POST OFFICE ADDRESS OF

COLLECT ON DELIVERY \$ _____ AND REMIT TO _____

STREET _____ CITY _____ STATE _____

WE HEREBY CERTIFY THAT THESE GOODS WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SECTIONS 6, 7 AND 12 OF THE FAIR LABOR STANDARDS ACT, AS AMENDED AND OF REGULATIONS OF THE UNITED STATES DEPARTMENT OF LABOR, ISSUED UNDER SECTION 14 THEREOF

PACKING SLIP

A StanleyBlack&Decker, Inc. Company

Certificate of Compliance

To: B/E Aerospace, Inc.
 9835 NW 14th Street
 Miami, FL 33172

Customer's Order No. 0FTE35
 Sales Order No. 422251
 Shipping Date 5/21/2012

Non-transferable

PART NUMBER	CONTROL NUMBER	I / A / W	QUANTITY
3591-4CN375	588326 (W-5043649)	MS21209-F4-15	40,000

We, Emhart Technologies certify that all items listed above and supplied on the above mentioned Purchase Order have been inspected and comply in every way with the relevant drawings and/or specifications in accordance with your requirements.

We further certify that all stainless steel inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawings and with the chemical composition and physical property requirements of AS7245 Rev A and ASME SA-479.

In addition, those stainless steel inserts covered by Military Standards MS21208, NASM21209 Rev 2, NASM122076 thru NASM122275 Rev 1, NASM124651 thru NASM124850 Rev 1, MS9018 Rev A and Military Specification NASM8846 Rev NEW are certified to conform thereof.

We also certify that all inconel inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawing and with the chemical composition and physical property requirements of AS7246 Rev NEW.

We further certify that Tangless® inserts are in conformance with NAS1130 Rev 4 and NA0276 Rev 2. Tangless® inserts are licensed from KATO.

Metric Heli-Coil inserts are covered by the following Aerospace Standards MA3279 Rev B, MA3280 Rev B, MA3281 Rev B, MA3329 Rev C, MA3330 Rev C, MA3331 Rev C and MA1565 Rev A.


Emhart maintains a single standard of quality and the Quality Assurance Program has been designed to comply with the requirements of ISO 9001:2008, AS9100:2009 Rev C, and TS16949:2009.

We further certify that the parts supplied are free from mercury contamination and that mercury in any form, including mercury thermometers, was not used in manufacture or testing of the parts.

DFARS 252.225-7009 applies to articles containing specialty metals. We further certify that any tools and kits with an NSN number and Heli-Coil wire inserts supplied on the above Purchase Order comply with the requirements of section 252.225-7015 of DFARS.

The Quality Assurance Program, inspection records, chemical composition and physical analysis reports and special process certification are available for your review at our plant in Danbury, Connecticut at any time during normal business hours.

We also certify that all brass inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawing and with the chemical composition and physical property requirements of ASTM "B16".

Authorized Signature 

Firm Emhart Technologies

Maureen Cronin, QA Administrator

A StanleyBlack&Decker, Inc. Company

**This certificate of compliance is valid only when issued by EMHART, Danbury, Connecticut or its authorized distributors.
 Any correspondence should reference the control number.**

PERTH, ON
ERIN, ON
DUMAS, AR
LANCASTER, SC

613-267-3762 FAX 613-267-6617
519-833-8632 FAX 519-833-2213
870-382-2980 FAX 870-382-6988
803-283-3363 FAX 803-283-6303



FOND DU LAC, WI
UNION, IL
PERRIS, CA

820-826-0609 FAX 920-826-0682
816-823-2131 FAX 816-823-2126
951-657-2106 FAX 951-843-8081

THE LEADING MANUFACTURER OF STAINLESS STEEL AND NICKEL ALLOY WIRE PRODUCTS
EXECUTIVE OFFICES: PERTH, ON CANADA - EMAIL: sales@centralwire.com

CENTRAL WIRE INDUSTRIES LTD.
1 NORTH STREET, PERTH, ONTARIO, CANADA K7H2G2
TEL: 613-267-3762 1-888-287-3761
FAX: 613-267-3929/2951 SALES FAX: 613-267-6617

CERTIFICATE OF CONFORMANCE

SOLD
TO

EMHART TEKNOLOGIES
50 SHELTON TECHNOLOGY CENTER
POST OFFICE BOX 859
SHELTON CT 06484
USA

SHIP
TO

EMHART TEKNOLOGIES LLC
SHELTER ROCK LANE
DANBURY CT 06810
USA

CUSTOMER'S PO NO.	TYPE OF CERT	CUSTOMER	ORDER NO.	WORK ORDER	DATE SHIPPED
694162 ✓	Customer	110394	2023373 3	5043649	3/21/12
SPECIFICATIONS: MS2 Issue CB, AS7245 Rev.A paragraphs 2 & 3.1 ✓ p/n: WR-WC-0320 ✓ W-5043649					

ITEM DESCRIPTION		
DESCRIPTION	SPEC. CLASS	HEAT
Fine wire 304 ✓ FULL HARD Bright .0320 500LB PLReel Clean	Melt mill ✓ NAS Country of origin ✓ USA	BOE7 ✓
	QTY SHIP 1183 ✓	025

CHEMICAL ANALYSIS						
C .0723 ✓	SI .324 ✓	MN .640 ✓	P .033 ✓	S .0012 ✓	CR 18.0595 ✓	NI 8.0280 ✓
MO .080 ✓	FE Balance ✓	CU .292 ✓	N .0497 ✓	CERTIFIED COPY OF ORIGINAL		
				Signature: <i>Manuel Loria</i>		

MECHANICAL PROPERTIES						
AS SHIPPED PROPERTIES:						
DIAMETER .032" ✓	TENSILE 206.900 KSI ✓	YIELD 181.300 KSI ✓	ELONGATION 1.700 % ✓	Y/T RATIO .87 ✓	CHEMICAL ANALYSIS O.K. APR 04 2012 1580 QUALITY ASSURANCE HELI-COIL PROD.	
AFTER HEAT TREAT PROPERTIES:						

Wire was solution annealed at 1900F min before final draw ✓
Passed cold bend, coil and stretch test. ✓ Tested to ASTM A479-04 ✓
Raw material is DFARS 252.225-7014 compliant. ✓ Rod produced by USA ✓

The material as shipped is free from mercury contamination. I certify the chemical analysis and physical and mechanical test results reported above are correct as contained in the records of the company.

Very truly yours,

C. Thomas
AUTHORIZED SIGNATURE

EMHART
TEKNOLOGIES**TORQUE TEST REPORT****StanleyBlack&Decker**

PART NUMBER 3591-4CN375	WIRE LOT NUMBER W-5043649	WORK ORDER NUMBER 588326	WORK ORDER QUANTITY 50000
THREAD SIZE 1/4-28 S/L	SPECIFICATION NUMBER PP-3	UNITS LB-IN	MACHINE NUMBER 3031

PLATED ☐AFTER H/T ☐BEFORE H/T ☐1st PIECE ☐IN-PROCESS ☐FINAL ☒

S P E C S	1st CYCLE				7th CYCLE		15th CYCLE	
	INSTALLATION		BREAKAWAY		INSTALLATION		REMOVAL	
	30-LB-IN	MAX	3.5-LB-IN	MIN	30-LB-IN	MAX	3.5-LB-IN	MIN
TEST RESULTS								
1	15.765	MAX	14.585	MIN	11.78	MAX	11.28	MIN
2	16.44	MAX	15.48	MIN	11.3	MAX	9.775	MIN
3	8.5	MAX	5.31	MIN	10.055	MAX	9.695	MIN
4		MAX		MIN		MAX		MIN
5		MAX		MIN		MAX		MIN
6		MAX		MIN		MAX		MIN

DISPOSITION ACCEPTED	INSPECTOR 106728	DATE 5/18/2012
--------------------------------	----------------------------	--------------------------



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
40	4	EA	MS20600AD4W5		87574459	CHERRY AEROSPACE SAN	11815		


Jason Lewis
Vice President of Quality

03/10/14



CHERRY®
AEROSPACE
 SPS Fastener Division, a PCC Company

Cherry Aerospace
 1224 East Warner Avenue
 Post Office Box 2157
 Santa Ana, CA 92707-0157
 USA



PACKING LIST

Order No: S0321725
 Order Date: 04/30/08
 Print Date: 12/22/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FA585

Credit Terms: Net 30
 Net 30

Ship Via: FEDEX O/N PPD
 FOB: Origin - Collect

Remarks:



IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
 IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
 DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
 DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

 BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
 AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
 TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
3	CR9163-4-05 Customer Item: MS20600AD4W5 	1600	G0302 87574459	25100.0	EA	10/14/11 

TEST REPORTS ENCLOSED = DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0321725
Order Date: 04/30/08
Print Date: 12/22/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FA585

Credit Terms: Net 30
Net 30

Ship Via: FEDEX O/N PPD
FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site		Qty Open	Promised	
		T	Location/Lot/Serial			
3	CR9163-4-05		1600		EA	10/14/11
	Customer Item: MS20600AD4W5					
		G0302	87574459	25100.0	()	

TEST REPORTS ENCLOSED = DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

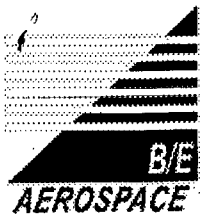
ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications, Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed

DIANE ROA
DIANE ROA



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
29	50	EA	AN5C15A		21007	AIRPASCO INDUSTRIES	32958		


Jason Lewis
Vice President of Quality

03/06/14

Airfasco Industries, Inc.

2655 Harrison Ave SW
Canton, OH 44706
Ph: 330-430-6190, Fax: 330-430-6199,

Packing Slip

Original

Invoice #: 127383

Invoice Date: 7/28/2011

Time: 2:46:58 PM

Page: 1

To:

B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102
USA

Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

Ship To:

B/E AEROSPACE
CONSUMABLES MANAGEMENT
9835 NW 14TH STREET
MIAMI, FL 33172

Cust. PO#: 0ZA391

Terms: NET 60

Ship Via: FEDEX GROUND COShip Via Acc:

Order Date: 5/19/2011

of Items: 2

of Boxes: 5

Weight: 241

Prepared By:

Sales Order: 104401

Ship Log #: 1

Ship Order:

Customer #: 12726

VAT #:

Cust VAT #:

Ship Date: 7/28/2011

Buyer:

FOB:

AWB:

Shipment:

Item	Part Number/Description	Shipped	BackOrd	CD	List Price	Disc	Unit Price	UOM	Total Amt
1	AN5C15A BOLT, AN Loc/Whse: Control #: 148998-1 L-21007 TEST REPORT L-21007	5000	0	NE				EA	
2	AN5C15A BOLT, AN Loc/Whse: Control #: 0-0	0	5000	NE				EA	

5 OF 5 ENCLOSED
5 BOXES 241 LBS
1 PALLET
PARTS MADE IN USA
THANK YOU!

Authorized Signature:



AIRFASCO
INDUSTRIES
MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

CERTIFICATE OF CONFORMANCE

B/E AEROSPACE

I hereby Certify that on 06/22/11 Airfasco Industries provided the supplies called for by Contract/ PO Number **0ZA391** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States.


WM. DENT

Quality Assurance Representative

PART NUMBER	LOT NUMBER	QUANTITY	PART NUMBER	LOT NUMBER	QUANTITY
AN5C15A	21007	5000			

C1F3-0



AIRFASCO

INDUSTRIES

MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 06/15/11

PART NO.: AN5C15A per NASM5C15A rev. 2

AFC LOT NO.: 21007

QTY MFG.: 10,200

PROCUREMENT SPECIFICATION: Produced per NASM 6812 rev. 2

HEAT TREAT

VENDOR: Bodycote

CERTIFICATION NO.: 38-83491

PROCUREMENT SPECIFICATION: Heat Treat per AMS-H-6875 A

PLATING

VENDOR: AFC

CERTIFICATION NO.: 11-21007

PROCUREMENT SPECIFICATION: Passivate per AMS 2700, Method 2, QQ-P-35

MATERIAL

MILL: Carpenter

COUNTRY OF MELT: USA

HEAT: 560499

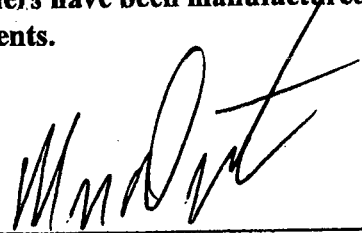
GRADE SPECIFICATION: Stainless Steel per MIL-S-18732, AMS 5628 D, Type 431 SS, .306"

431 SS MATERIAL CHEMISTRY											
ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	-AL-	Other
LADLE	.160	.600	.017	.004	.550	1.65	15.99	.030	.060	.000	

PHYSICAL PROPERTIES				
PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	6,500 lbs.	4,980 lbs.	5,750 lbs.	HRC 26-32
ACTUAL	8,320 lbs.	7,910 lbs.	6,848 lbs.	HRC 30-31

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

Airfasco Industries
Quality Assurance Representative:


Wm Dent



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
56	5000	EA	NAS1149D0363J		X23Y1	ANILLO INDUSTRIES	10630		


Jason Lewis
Vice President of Quality

03/06/14

ANILLO Industries, Inc.

2090 NORTH GLASSELL STREET, ORANGE, CA 92865-3391 USA
PLEASE REMIT TO
P.O. BOX 5586 ORANGE, CA 92863-5586 USA
(714)637-7000 (562)924-6632 FAX(714) 637-3022



547035

Packing List & Certification

WE ACCEPT
VISA/MASTER/DISCOVER/AMEX

SOLD TO B/E AEROSPACE, INC. ATTN: ACCOUNTS PAYABLE DEPT. P.O. BOX 025263 MIAMI, FL 33102-5263	1165	SHIP TO B/E AEROSPACE, INC. CONSUMABLES MANAGEMENT 9835 NW 14TH ST MIAMI, FL 33172	E
--	-------------	---	----------

DATE ORDER REC'D 12/07/2011	ORDER NUMBER 1A1289	INVOICE DATE	SHIPPED VIA FEDXG 033101490	TERMS 1% 10 DAYS, NET 30
ITEM	ORDERED	SHIPPED	DESCRIPTION	NET WEIGHT

1	3,528,188	125,000	NAS1149D0363J REV 5 /LOT#X2314 /MIN/MAX /QCR:1,4,6,8,15,16/AN960JD10 ECCN: 9A991 Schedule B#: 7616.10.8000 COO: US NLR	
---	-----------	----------------	---	--

We certify that: 1. item number 1 above is manufactured in accordance with the material and processing specifications of this order.
2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods. No good to be returned without written authorization. All claims for defective material must be filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

<< R.M.A.# REQUIRED FOR RETURNS >>

Certification

B/E Aerospace, Inc. - Consumables Management	
Self Release	
Signature and Stamp:	
Date: <u>07-03-13</u>	

BY Ben Omidwar
Ben Omidwar, Quality Assurance Manager

FI 4.03.05

IFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

That the material covered by this certificate has been inspected with, and has been found to meet the requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This certificate shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Per *Lin Miller*
Tarence Thom
Quality Assurance Manager

Malcolm Murphy
Director of Manufacturing Development Works

1329201 0
Ship Date B.L. No Invoice No Alcoa No. Item
2012-01-11 6661246 00000 1000323565-1 DP-23565-1
P.O. No./Govt Contract No. Customer Alcoa Item
70432 Unit: -01 BOEING-TMX G041003529R06

T40680

Page 1 of 2

833839

Ship To: THE BOEING COMPANY
TMX AEROSPACE DIVISION
12821 CARMENITA ROAD
UNIT F
SANTA FE SPRINGS 90670 CA

Item Description

0.063 IN TK (+.0030 -.0030) X 48.0 IN W (+.046875 -.046875) CAT X 806609-
7 (N) A/T ALCLAD 2024-T3 COILED SHEET MILL FINISH 895639-7. AMS-QQ-A-
250/5 REV A IS 2010 AS9103 D6-82479 REV E
((MARKED)) LIGHTLY OILED COIL SIZES: ID
20 IN OD MAX 49 IN MAX GROSS SKID WGT: 7500 LB QUAN TOL +/-
20 & CQR 0108580 REV 11 CUST REQ 12-01-
07 *** W/E 12-01-14 ***

HM 12-28-12

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector Clock Numbers
1	371551	317841	5355	1	PC	27767 46964
2	371636	317842	5624	1	PC	27767 46779
3	371639	317842	5532	1	PC	27767 46779
			16511.	3		

Notes for CQR: 0108580.11

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ- A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5F, AMENDM ENT 2.
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5F, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AM S-QQ-A-250/5.

CQR: 0108580.11 -Specification Limits

Impr	Dir	UTS	TYS	EL4D
T3	Long Transv.	Max	KSI	KSI
		Min	61.0	40.0
				15

Chemical Composition

Alloy	Max	Min	SI	FE	CU	MN	MG	CR	ZN	TI	Other Each	Other Total	Aluminum
Alloy 2024			0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15	REMAIN
					3.8	0.30	1.2						

AN960JD10

17
17
17

07-03-12

NA\$1149D0363J

X2314

Signature: *[Signature]*
Title: Quality Records Clerk

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Malcolm Murphy
Director of Manufacturing Davenport Works

Terrence Thom
Quality Assurance Manager

1329201	0			
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item
2012-01-11	6661246	98000	1000323565-1	DP-23565-1
P.O. No./Govt Contract No.	Customer	Alcoa Item		
TU7432 Ln#: 01	BOEING-TMX	G041003529R06		

Page 2 of 2

CQR: 0108580.11 -Specification Limits (cont.)

Chemical Composition	CU	MN	MG	V	ZN	TI	FE+SI	Other	Aluminum
LINER	Max	0.10	0.05	0.05	0.05	0.10	0.03	0.70	0.03
Alloy 1230	Min								99.30

Lot: 317841 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No->	UTS	TYS	EL4D
T3	Long Transv.	Test	KSI	KSI	PCT
		2	63.3	43.6	17.2
			63.4	43.5	19

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9424074	Actuals	0.06	0.16	4.6	0.64	1.5	0.00	0.09	0.03

Lot: 317842 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No->	UTS	TYS	EL4D
T3	Long Transv.	Test	KSI	KSI	PCT
		2	62.7	44.2	18.2
			63.2	44	18.5

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9424073	Actuals	0.06	0.16	4.6	0.64	1.5	0.00	0.09	0.03

This material was melted in the United States or a Qualifying Country (REF DFARS 225.872.1(a)); it was manufactured in the United States

AN960JD10

WE HEREBY CERTIFY THAT THIS DOCUMENT IS A
TRUE COPY OF REPORTS NOW ON FILE AT ANILLO
INDUSTRIES, INC.

Date: 07-03-13
Part Number: NAS1149D0363J
Lot Number: X2314

Signature: [Signature]
Title: Quality Records Clerk

High Tower
17
In-Process

Certification

ANILLO INDUSTRIES, INC.
2090 North Glassell st.
Orange, CA. 92865-3391
(714) 637-9110

This is to certify that the below listed parts were processed per the applicable specification listed below.

Test reports and procedures governing this process are on file and subject to examination.

CHEMICAL FILM MIL-DTL-5541

Type	Class	Thickness	Revision
I	3		F

Job Number: **X2314**

P/N REV.: **4**

Quantity: **503,700**

Visual: **Y**

Part Number: **NAS1149 D 0363 J**

Adhesion: **N**

Description:

Date: **02/08/13**

Authorized by: *Maribel C.*

Stamp:



FORM # 4.09.117 REV A 05/19/09



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
58	100	EA	NAS1149DN949J		9650-4/25/13	MOELLER MFG	58009		


Jason Lewis
Vice President of Quality

03/06/14

**MOELLER MFG. & SUPPLY, INC.**

805 EAST CERRITOS • ANAHEIM, CA 92805

(714) 999-5551 • FAX (714) 999-5970

<http://www.moellermfg.com>

cage code: 58009

SHIPPER NO. : 42536

CERTIFICATION**PACKING LIST**S
O
L
D
T
OB/E AEROSPACE CONSUMABLES
MANAGEMENT
PO BOX 025263

MIAMI

FL 33102-5263

Customer #: B/E AER-FL

S
H
I
P
T
OB/E AEROSPACE CONSUMABLES
MANAGEMENT
9835 NW 14TH ST

MIAMI

FL 33172

P.O. #: 0NXE08

DATE ORDER REC'D. 4/24/2013		ORDER NO. 0NXE08		COMMENTS		SHIPPED VIA FED X GRD		TERMS 1%-10/N-30		DUE 5/30/2013	
ITEM	ORDERED	SCHEDULED	SHIPPED	PART NUMBER/DESCRIPTION							NET WT.
01	15,000	15,000	15,000 RL	NAS1149DN949J REV. 5 AN960JD9 REV. 21 LOT 9650- 4/25/13 FULL CERTS ABCEFHPUV <							

MANUFACTURED IN THE U.S.A.

MOELLER MFG. & SUPPLY, INC. - PACKING LIST & CERTIFICATION

WE CERTIFY THAT THE MATERIAL ON THIS ORDER CONFORMS IN ALL RESPECTS TO THE CURRENT APPLICABLE GOVERNMENT AND/OR MANUFACTURER'S SPECIFICATIONS.

1. ALL ITEMS ABOVE ARE MANUFACTURED IN ACCORDANCE WITH THE MATERIAL AND PROCESSING SPECIFICATIONS OF THIS ORDER. WE ALSO CERTIFY THAT THESE PARTS HAVE NOT COME IN CONTACT WITH MERCURY WHILE IN OUR POSSESSION.
2. THE GOODS COVERED BY THIS INVOICE WERE PRODUCED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE FAIR LABOR STANDARD ACTS OF 1938, AS AMENDED. ALL CLAIMS FOR ERRORS OR SHORTAGES MUST BE MADE WITHIN 10 DAYS AFTER RECEIPT OF GOODS. NO GOODS TO BE RETURNED WITHOUT WRITTEN AUTHORIZATION. ALL CLAIMS FOR DEFECTIVE MATERIAL MUST BE FILED WITHIN 30 DAYS OF SHIPMENT TO RECEIVE CONSIDERATION. WE DO NOT ASSUME FINANCIAL RESPONSIBILITY FOR LIABILITY FROM THE USE OF PRODUCTS SOLD, OTHER THAN REPLACEMENT VALUE OF THE PRODUCTS SOLD, IF CLAIMED WITHIN THE SPECIFIED TIME LIMIT ABOVE.
3. PARTS ARE TO BE CONSIDERED ITAR EXEMPT OR DUAL PURPOSE UNLESS OTHERWISE STATED.

BY

BARRY LUKE, Q.A. MANAGER

RECEIVED IN
GOOD CONDITION BY
DATE

5/30/13

PACKED BY

RL

BAGS

CARTONS

1

GROSS WT. 14

MOELLER MANUFACTURING. & SUPPLY, INC. • 805 EAST CERRITOS • ANAHEIM, CA 92805 • U.S.A.

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4878 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material and the composition limits and test the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made in this certificate. The recording of false, fictitious, or otherwise fraudulent statements or omissions on this certificate by any recipient may be punished as a felony under applicable law.

Matthew Murphy
Director of Manufacturing Development Works

Terrance Thum
Quality Assurance Manager

1265375	0			
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item
2011-07-11	6064760	00000	1000294940-2	DS-94940-01-2
P.O. No./Govt Contract No.	Customer	Alcoa Item		
43-95818	BRALCO-LA MIRADA	G041015470R07		

Page 1 of 2

Ship To: BRALCO METALS
15090 NORTHAM ST
LA MIRADA 90638 CA

Item Description
0.05 IN TK (+.0030 -.0030) X 48.0 IN W (+.046875 -.046875) CAT D 148786 (N) A/T ALCLAD 2024-T3
COILED SHEET MILL FINISH. AMS-QQ-A-250/5
REV A IS 2010 AMS4041 REV Q ASTM209 REV 07
((NOT MARKED)) LIGHTLY OILED COIL
SIZES: ID 20 IN COIL WGT: MAX 5625 LB
MAX GROSS SKID WGT: 7250 LB QUAN TOL +/-
25 % CQR D148786 REV 30 CUST REQ 11-07-
06 *** W/E 11-08-13 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector Clock Numbers
1	317330	624214	4117	1	PC	27767 47349

Notes for CQR: D148786.30

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5P, AMENDM ENT 2.
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5P, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AN S-QQ-A-250/5.

CQR: D148786.30 -Specification Limits -----

Temp	Dir	UTS	TYS	ELAD
		KSI	KSI	PCT
T3	Long Transv.	Max		
		Min	59.0	39.0 15

Chemical Composition	SI	FE	CU	MN	MG	CR	ZN	TI	Other	Other
	Max	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05
Alloy 2024	Min			3.8 <td>0.30 <td>1.2</td> <td></td> <td></td> <td></td> <td></td> </td>	0.30 <td>1.2</td> <td></td> <td></td> <td></td> <td></td>	1.2				

REMAIN

Sold to: MOELLER MFG & SUPPLY, PO: 106590 Part: Order No.: 63679
TR clerk signature: *[Signature]*



BIE Aen R

P.O. ONXEO8
P.N. 6251149029497/AN96309
REV. 5-21 LOT # 9650 4/25/13
MOELLER MFG. & SUPPLY, INC.
805 E. CERRITOS
ANAHEIM, CA 92805

Outokumpu Stainless Ltd.
 A&R Rod Mill
 Stevenson Road
 Sheffield, S9 5DQ
 Telephone: +44 (0) 114 242 1124
 Fax: +44 (0) 114 242 2152


OUTOKUMPU

Prod-Nr
 Test certificate No
 No du certificat
72697
 In Accordance With EN 10204.3.1

Rechnungs-Nr Invoice/Cons No No de facture	Bestell-Nr Customer Order No No de commande client	NORM 17-7PH / AISI 631	SPECIFICATION 5500 17 ROD SI	NORME
ADDRESS		Order No N° de commande client AV198544/01	AV198544/01	
		Product description Description du produit SOFTENED AND DESCALED	SOFTENED AND DESCALED	
		Product form Forme du produit 5.50 mm Round	5.50 mm Round	
		Product size Taille du produit 6 rod coils for 5.235t	6 rod coils for 5.235t	
		Product to Produit à E120285	E120285	

Schmelzanalyse				Cast Analysis				Analyse de Coulée			
Si	Mn	P	S	Si	Mn	P	S	Si	Mn	P	S
0.0850	0.2880	0.0500	0.0270	0.0010	16.6300	0.1800	7.7100	0.0070	0.0010	0.0610	0.0020
Al	Cr	Mo	Ni	Al	Cr	Mo	Ni	Al	Cr	Mo	Ni
0.1280	0.2450	0.0080	0.0200	0.0400	0.0200	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010

Mech und phys Eigenschaften				Mechanical and Physical Properties				Caractéristiques mécaniques			
0.2%RP kPSi	1.0%RP kPSi	UTS kPSi	RAV	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain	Strain Grain Size Taille de grain
28.372	84.374	113.565	83.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decarb	Max	Batch Average	Batch Percentage	Cleanliness							
				Intergranular Corrosion Test							

Additional Information Chemistry to Meet AMS 5578 and ASTM A 313 Material free from known mercury, radium, or alpha particle contamination Material melted and rolled in Sheffield, England by Outokumpu Stainless Ltd.	Technical Manager  T. Clarke Order Date Date 22/03/2012 This order was manufactured according to a Quality System registered to ISO 9001:2008 and approved by TÜV Nord. Certificate Registration No. 44 106 11608
---	--

1162

These certificates are issued in accordance with the requirements of the European Standard EN 10204. The information provided is for information only and does not constitute a warranty. The material is supplied as described and is not to be used for any purpose other than that for which it was intended. The user is responsible for the safe use of the material. The manufacturer is not responsible for any damage or loss resulting from the use of the material. The material is supplied as described and is not to be used for any purpose other than that for which it was intended. The user is responsible for the safe use of the material. The manufacturer is not responsible for any damage or loss resulting from the use of the material.

MAR 08 2013
 AVB 51 INSP
 LOT #1325904



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
50	300	EA	MS24693-C48		48701	NORTH EAST FASTENERS	072N5		


Jason Lewis
Vice President of Quality

03/06/14

** DEARS ** ** CERT Q13-P **



AVIBANK
MFG. INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED
08/05/13

PAGE	OF	DATE ENTERED	SALES ORDER NO.
1	1	06/28/13	655679-8533

B 103866
I B/E AEROSPACE (M & M)
L P.O. BOX 025263
L 10000 N.W. 15TH TERRACE

T MIAMI, FL
O USA 33102-5263

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST

T MIAMI, FL
O USA 33172

CUSTOMER ORDER NO: 0PXN53		CONTRACT NUMBER		RATING	ORDERED BY EDWARD	REC'D BY GLE	TERRITORY NO. 124
P/B 0	CERT 1	INV 1	DD 250 REQ'D N	PRES PKG REQ'D N	RESALE OR TAX R	TYPE OF INSPECTION	
TERMS 1/2% 10, NET 30						FREIGHT NOHO/COLLECT	
SHIPPED VIA FEDEX GROUND							

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO. BACKORDERED
001	750	E	FEDEX ACCT# 0331-0149-0 QAP 33.0 CLAUSES A,A.1,B,C,E,H,P,U,V APPLY *** 3 LOT MAX *** BLC4BA13S MS17984C413 SHIP#: 1 QTY 750 LOT:1356118 AREA :NS AISLE :F SEC:20	0
002	1	L	270-CERT Q13-P CHEM & PHY CERTS 001 SHIP#: 1 QTY : 1 LOT: AREA : AISLE : SEC:	0

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *Dee Deans*
AUTHORIZED QUALITY CONTROL REPRESENTATIVE

** DEARS ** ** CERT Q13-P **



AVIBANK
MFG., INC.

AEROSTRUCTURES DIVISION, A PCC COMPANY

11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605

PHONE: (818) 392-2100 • FAX: (818) 255-2094

No ozone depleting substances used in processes.

CERTIFICATE OF CONFORMANCE

SHIPPER

DATE SHIPPED:
08/05/13

PAGE	OF	DATE ENTERED	SALES ORDER NO.
2	1	06/28/13	655679-8533

B 103866
I B/E AEROSPACE (M & M)
L P.O. BOX 025263
L 10000 N.W. 15TH TERRACE

T MIAMI, FL
O USA

33102-5263

S B/E AEROSPACE CONSUMABLE MGMNT
H 9835 NW 14TH ST

T MIAMI, FL
O USA

33172

CUSTOMER ORDER NO. 0PXN53				CONTRACT NUMBER				RATING		ORDERED BY EDWARD		REC'D BY GLE		TERRITORY NO. 124	
0	1	1	3	N	N	R		TYPE OF INSPECTION		TERMS 1/2% 10, NET 30		FREIGHT NOHO/COLLECT			
SHIPPED VIA FEDEX GROUND															

ITEM NO.	NO. SHIPPED	UNITS	PART NUMBER / DESCRIPTION	NO. BACKORDERED
			<p>TO OUR VALUED CUSTOMERS A RETURN MATERIAL AUTHORIZATION (RMA) NUMBER IS REQUIRED FOR ALL PRODUCTS RETURNED TO AVIBANK TO REQUEST A RMA NUMBER CONTACT YOUR AVIBANK SALES ASSOCIATE AT 818/392-2100</p> <p>THESE COMMODITIES WERE EXPORTED FROM AVIBANK MFG., INC. IN ACCORDANCE WITH EXPORT ADMINISTRATION REGULATIONS OR INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. COMPLIANT WITH DFARS 252.225.7014 ALT 1</p>	

PULLED BY	SHIPPED BY	SHIP VIA	DATE SHIPPED	WAYBILL/OTHER INFO	NO. OF PKGS.	WEIGHT
	33		8/8/13			

We hereby certify that all materials used in the manufacture of parts covered by this report conform to the material specifications called for by the above purchase order. We further certify that the parts are manufactured in accordance with applicable drawings or specifications current on the date on which the order was placed. Test reports covering materials in these parts, and indicating conformance with applicable specifications, are on file and subject to examination. No ozone depleting substances were used in processes. Parts are mercury free of contamination.

WI-14-AMS-004 REV:NC

AVIBANK MFG., INC.

BY: *Dore Moore*
AUTHORIZED QUALITY CONTROL REPRESENTATIVE



AV BANK
MFG. INC.
AEROSTRUCTURES DIVISION, A PCC COMPANY
11500 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605
PHONE: (818) 392-2100 • FAX: (818) 255-2094

CERTIFIED TEST REPORT

1 of 1

CUSTOMER: B/E AEROSPACE (M & M)

SHOP ORDER NO./WORK ORDER NO.: 1356118

CUSTOMER P/N: MS17984C413

CUSTOMER P.O.: 0PXN53

QTY. SHIPPED: 750

AVIBANK P/N: BLC4BA13S RV. N

PART NAME: S/A STANDARD

PROCUREMENT SPEC: NAS1332

BODY WO.: 1355670 QTY. MFG'D: 750

PROCESS	PROCESSOR	TYPE/CLASS	SPECIFICATION
ANODIZE	JESSE'S PLATING, PACOIMA, CA.	II/2	MIL-A-8625 'F'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	CH900	AMS2759 'E'
HEAT TREAT	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	HRC 40 MIN	AMS2759 'E'
PASSIVATE	AVIBANK MFG., INC., NO. HOLLYWOOD, CA.	2	AMS2700 'E'

NO.	BOLT TENSILE (LBS)	TORQUE (IN LBS)	RETAINING DEVICE TENSILE (LBS)	SHEAR (LBS)
1.	N/A	N/A	242 NF	10,070
2.	N/A	N/A	240 NF	10,040
3.	N/A	N/A	244 NF	10,110
4.				
5.				
REQT.	N/A MIN.	N/A MIN.	230 MIN.	9,200 MIN.

* BF = BALL HOLE FAILED. * TF = THREADS FAILED. * NF = NO FAILURE. ** (S) = SINGLE SHEAR. ** (D) = DOUBLE SHEAR.

OTHERS: THESE PARTS WERE LAB TESTED PER 'NAS' REQMTS AND FOUND ACCEPTABLE.
SALES ORDER NO. 655679-8533.

AVIBANK MFG., INC. CERTIFIES THAT THE PARTS LISTED ABOVE WERE MANUFACTURED IN COMPLIANCE WITH YOUR PURCHASE ORDER. ALL TEST AND INSPECTION REPORTS ARE ON FILE AT AVIBANK FOR VERIFICATION.

AUTHORIZED SIGNATURE:
WI-03-CTR-005 rev NC

Norma Castanaza
NORMA CASTANAZA Q.C. CLERK



DATE: 08/05/13

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

1355670

NAME

B04

CLERK: EV

STAR METALS, LLC.

611 WEST LAMM ROAD

FREEPORT, IL 61032

An ISO 9001:2008 Registered Company

CERTIFICATE DATE: 4/30/13

CUSTOMER:

COPPER & BRASS

SALES

ORDER#: 198272

CUSTOMER PO#:

5400170861-R05

MATERIAL:

17-4PH ✓

DESCRIPTION:

255" ✓

HEAT NUMBER:

E121874

QTY. SHIPPED:

2,103 LBS

CONDITION:

ANNEALED

PART#

CERT MAT. NO.

XSSRD05811

CHEMICAL COMPOSITION

C	Mn	Si	S	P	NI	Cr	Mo	Other Elements
.013	.740	.339	.0280	.029	4.67	15.42	.140	✓Cu=3.323 Co=.068
✓	✓	✓	✓	✓	✓	✓	✓	Ti=.001 Nb=.259 ✓
								Al=.002 B=.0015
								Sn=.009 N=.0310
								V=.0500 W=.020
								As=.003 Ca=.0023
								Ta=.002 Pb=.0002

MECHANICAL VALUES

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
134	126	14	69	271 HB

✓ H900 HT CAPABILITIES 900F FOR 1 HR AIR COOL

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
191	174	12	63	403 HB

ADDITIONAL REMARKS: ✓

This material meets the chemistry specifications for AMS 5643R, ASTM A564-04, ASTM A484-10, ASME-SA-564 CHEM & MECH MACRO & MICRO STRUCTURES OK PER AMS 5643, DELTA FERRITE 0.35%.

MATERIAL IS FREE FROM MERCURY CONTAMINATION, EN10204 3.1.B
MELT ORIGIN: ENGLAND

MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:

Form# 7.9.0.0.4 Rev C

James P. Elliott-Quality Process Manager

Q. C. Review

Sig.

Date

5/10/13

Lot #

1343995

From: ThyssenKrupp Materials NA

Cust. AVIBANK MFG INC

CstAr

Wgt.: 2,103.000 LB

Del.: 2402471790

CstOr 729445

Date 05/10/2013

John R. Zambetti



ALARD Machine Products
1629 West 132nd Street, Gardena, CA 90249-2005
Phone: (310) 323-4374
Fax: (310) 323-6031
www.alardmachine.com



APR 10 2013

CERTIFICATE OF CONFORMANCE

CUSTOMER

Alard MTG

PURCHASE ORDER NO.

739831

PART NO.

16-4C

REV. AC

BUYER

Charles Figueroa

ALARD SHIPPER NO.

92626

QTY. 50 010,8

ALARD SALES ORDER NO.

21912-5

ALARD SHOP ORDER NO.

21912-3

This is to certify that articles delivered under this shipper conforms to all applicable drawings and specifications furnished with or referenced in the above order, except for materials supplied by purchaser. Chemical and /or physical test reports and other evidence of conformance with the specifications are on file and subject to examination for a period of 10 years from date of shipment.

During the manufacturing processes, tests and inspections, this product has not come in contact with mercury or any of it's compounds, nor with any mercury containing device employing a single boundary of containment without specific approval of the purchaser. This requirement has been passed on to all sub-contractors.

By:

AUTHORIZED ALARD REPRESENTATIVE

Date:

04-09-13

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

K830070

NAME

SHOULDER RING

CLERK: GV NC ☒ DS

Form AL203-REV. "E" 1-23-08

INSPECTOR
TITLE



1901 N. Narragansett Ave. • Chicago, Illinois 60639
773/804.0404 • Fax 773/804.0408
www.industeel.com

An ISO 9001 Certified Company

01/29/13

ISW Order/Invoice Number: 146210-00

SOLD TO: A9990
AVIBANK MFG. CO.

SHIP TO: A9991
AVIBANK MFG. CO.
11500 SHERMAN WAY

P.O. BOX 9909
NO HOLLYWOOD CA 91609

NO. HOLLYWOOD, CA 91605

CUSTOMER PO: 737859

085017BT

.0850"17-7 PH STAINLESS COND C CNT CLS

WEIGHT: 560

HEAT NUMBER: E111057

CHEMISTRIES

C	Mn	P	S	Si	Cr	Ni	Al
.077	.880	.023	.001	.286	16.630	7.690	.890
Mo	Cu	N					
.260	.346	.019					

PHYSICAL PROPERTIES

TENSILE: 245935C 297882CH

TORSIONS:

ROCKWELL #1:

BENDS:

ROCKWELL #2:

SALT SPRAY HOURS:

YIELD STRENGTH: 000000C/000000CH

COATING WEIGHT:

ELONGATION:

GRAIN SIZE:

REDUCTION OF AREA:

MAIN LOT #

**** MERCURY FREE ****

*** SPECIFICATIONS ***

1356118

TARIFF: 7223.00

ASTM A313-10

COMPONENT LOT #

NAFTA: B

AMS 5678-F

KP30005

NAME

MELT: US UNITED STATES

RING

ORIG: US UNITED STATES

CLERK: GV NCX DS

MILL: SIRI WIRE COMPANY

DFAR: Y

ROHS: Y

Rey Domingo, Quality Control Manager

FEB 01 2013



LOT #1317386

The values and specifications herein are passed through from the manufacturer directly to the customer.
Please see reverse side or www.industeel.com for all Terms and Conditions of Sale.
Material Properties Sheet 70403-MPS Version 1 Approved by BF 11/20/12

Certified Inspection Report

03/01/13
07:44:03

Alcoa Inc.
Massena Operations
Park Avenue East, Massena, NY 13662



Customer **Bralco Metals** Customer P.O. No. **43-108226** Customer Part No. **Alcoa Order No. MMC-A5952-002** Govt. Contract No. **000160946**

Ship To **Bralco Metals**
15090 Northam St
La Mirada, CA 90638

We hereby certify that the material covered in this report has been inspected in accordance with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, or as previously agreed to with customer and that samples representative of the material met the composition limits and have the mechanical properties shown on the face of this sheet. Manufactured under an ISO/TS 16949 registered quality management system.
Melted and manufactured in the USA.

Zhou Wang
Zhou Wang, Quality Assurance Manager

Date Shipped **03/01/13** Weight Shipped **961 lbs** Product **CFRB-SMS-ROD DIA. X 12 FT** BOL **000160946**
Alloy - Temper **2024-T351** Size **0.81250 IN** Shape **DIA** Config **12 FT** QRR

Specifications:

AMS 4120R (Except Marking)
AMS-QQA-225/6A
Material conforms to T4 requirements
QA-225/6E (1)
ASTM B211-12E1

Product produced and marked to the requirements of AMS-QQ-A-225/6 also meets the requirements of QQ-A-225/6.
Product produced and marked to the requirements of QQ-A-225/6 also meets the requirements of AMS-QQ-A-225/6.

**THIS METAL HAS NOT BEEN
EXPOSED TO MERCURY OR MERCURY
CONTAINING COMPOUNDS WHILE IN THE
POSSESSION OF BRALCO METALS**

TEST REQUIREMENTS		Test	Test	Test	Test	Test	Test	Test	Test	Test	Test
		U.T.S.	T.Y.S.	%Elong							
Max:											
Min:		62.0	45.0	10.0							

Test Results		Test	Test	Test	Test	Test	Test	Test	Test	Test	Test
Lot / Work Order		U.T.S.	T.Y.S.	%Elong							
MA20126199											
7											
Max:		70.7	55.0	23.0							
Min:		69.1	53.0	21.0							

When 2 or more tests per lot are made, the highest and lowest values are reported.
Analysis obtained from one or more samples in this lot.

TEST ABBREVIATIONS				T.Y.S.				%Elong		Elongation % in 2"					
U.T.S.		Ultimate Tensile Strength KSI		Tensile Yield Strength KSI											
Aluminum Association Chemical Composition Limits (in Weight %)															
		%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%Others	%Others	%AL			
ALLOY	MAX	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15	Rem			
	MIN			3.8	0.30	1.2				Each	Total				
2024															

Actual Started Chemistry															
LOT/WORK ORDER		%SI	%FE	%CU	%MN	%MG	%CR	%ZN	%TI	%OE	%OT	%AL			
-	MAX	0.08	0.24	4.7	0.64	1.5	0.01	0.11	0.02	LT 0.05	LT 0.15	Rem			
	MIN	0.07	0.23	4.4	0.63	1.4	0.01	0.04	0.02						
MA20126199															

NOTES:

Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product.
This alloy meets the requirements of EU 2002/95/EC (RoHS) and EU 2000/53/EC for lead, mercury, cadmium and hexavalent chromium.

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

KB20435

NAME

BUTTON HANDLE

CLERK: GV NC DS

Page 1

Sold to: AVIBANK MFG., INC. PO: 741008 Part: 343059
TR clerk signature: *Allyson Traylor*

APR 05 2013

LOT # 13333503

CERTIFICATE OF CONFORMANCE

JESSE'S PLATING


12229 MONTAGUE ST.
PACOIMA, CA 91331
818-899-4600 VOICE
818-899-0771 FAX

Date	Invoice #
7/2/2013	53094

AS9100 & ISO 9001 CERTIFIED

Bill To
AVIBANK MFG INC 11500 SHERMAN WAY NORTH HOLLYWOOD CA 91605

P.O. No.	Terms	Due Date	Rep	Ship Date	Ship Via	Project
743185	2% 15 Net 30	8/1/2013	JV	7/2/2013	Cust. Pickp	

Qty	Item	Description
5.010	5-4AB MIL-A-8625F	REV P BUTTON HANDLE ANODIZE PER MIL-A-8625F TYPE II CLASS 2 BLACK
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>CERT REVIEW</p> <p>MAIN LOT # <u>1356118</u></p> <p>COMPONENT LOT # <u>KB20435</u></p> <p>NAME <u>BUTTON HANDLE</u></p> <p>CLERK: GV <u>NC</u> DS <u> </u></p> </div> <div style="width: 45%; text-align: right;">  <p>Q. C. Review Sig. <u>Nmaly</u> Date <u>7/3/13</u></p> </div> </div>		
<p>WE HEREBY CERTIFY THE ABOVE PARTS ARE PROCESSED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. TEST REPORTS ARE ON FILE. ANY DISCREPANCY MUST BE REPORTED WITHIN 24 HOURS.</p>		

BY: [Signature] JORGE A VILLAGRAN

TITLE: [Signature] Q.A. MANAGER

3
JP



Linear Motion. Optimized.

SHIP TO: AVIBANK MFG INC
11500 SHERMAN WAY
NORTH HOLLYWOOD CA 91605
United States

CERTIFICATE OF CONFORMANCE		
DELIVERY NAME: 2819068	DATE PRINTED: 22-JUL-2013	PAGE: 1 of 1
SHIP FROM: ABEK LLC 492 Birch Street Bristol CT 06010 United States		
Tel: (860) 314-3921 Fax: (860) 314-3942		
BILL TO: AVIBANK MFG INC 11500 SHERMAN WAY NORTH HOLLYWOOD CA 91605 United States		

PICK-UP DATE: 22-JUL-2013		SHIP METHOD: UPS-Air-Red Next Day		FREIGHT TERMS: COLLECT - FROM ORIGIN		FSCM:	
DELIVERY TERMS EXWORKS FACTORY		TAX NAME: EXEMPT		CUSTOMER TAX NUMBER:		WAYBILL: 120176470162706506	
SHIPPING INSTRUCTIONS: ACCT# 60X10X				TAG NUMBER/REF:		PO REF#:	
ITEM NUMBER	REFERENCE ITEM	ITEM DESCRIPTION	CUSTOMER PO NO.	ORDER NO.	QTY ORDERED	QTY ORDERED	QTY SHIPPED
SS0078121CXXDF	SS0078121CXXDF	5/64 440C GRADE 100 DFAR - SS0078121CXXDF	741483	1701365	1.2	MPC	90.02
COUNTRY OF ORIGIN: ****EAR99****		United States					
Lot Number L0012469	Quantity 48.265	Heat Number 548226		Hardness Test HRc		Hardness 60-62	
Material meets DFAR 252.225-7009:7014. Material certs meet ASTM F-2215. Material meets ASTM A276, AMS QQ S 783 and AMS 5630. ✓ Passivation meets SS8435 and AMS 2700 Heat Treat meets SS9213 and AMS 2759/5 Country of Origin (Mfg.): USA Country of Melt (Matl.): USA							
CERT REVIEW							
MAIN LOT # 135618							
COMPONENT LOT # 1340588							
NAME BALL							
CLERK: GV NC DS							
NUMBER OF PACKAGES 1			GROSS WEIGHT 4.0 LB		VOLUME		

THE UNDERSIGNED, INDIVIDUALLY, AND AS THE AUTHORIZED REPRESENTATIVE OF THOMSON INDUSTRIES INC., WARRANTS AND REPRESENTS THAT; ALL THE INFORMATION SUPPLIED ABOVE IS TRUE AND ACCURATE; THE MATERIAL COVERED BY THIS CERTIFICATION CONFORMS TO ALL CONTRACT REQUIREMENTS (INCLUDING BUT NOT LIMITED TO THE DRAWING AND SPECIFICATIONS); THE INSPECTION AND THE ANALYSIS HEREIN ARE TRUE AND ACCURATE.

These commodities if being exported from the United States must be exported in accordance with the Export Administration Regulations. Diversion contrary to U.S. Law is prohibited

QUALITY ASSURANCE MANAGER AUTHORIZED SIGNATURE

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 000564343



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 200-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A PERJURY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADON, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

01/19/10

CUSTOMER/BESTELLER/CLIENT

SELLER/VERKÄUFER/VEDEUR PAGE 1 OF 2

ABBOTT BALL COMPANY
MIKE CHUBET MTL'S MGR
RAILROAD AVENUE
WEST HARTFORD .CT 06110

ALN

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NONWORKS-NUM/DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/PODS
213280	W49841	09/11/06	659

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226

PRODUCT DESCRIPTION: CONSUMET TYPE 440C BEARING QUAL HOT DRAWN SPHERODIZED PRECOAT

SPECIFICATION: AMS 5618 REV G (05/06)
XAMS-00-S-763B (08/06)
XAMS 5680 REV C (05/06)
XAMS 5630 REV J (10/07)

SIZE 0.075000 IN. (1.90 MM) RD WIRE INGOT 3

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN(XRF)	SI(XRF)	P (XRF)	LT (COM)	CR(XRF)
1.03	0.40	0.70	0.017	0.00	16.97
NI(XRF)	MO(XRF)	CU(XRF)			
0.15	0.44	0.04			

MACROETCH: TESTED TO ASTM-A-684: MAXIMUM VALUES ARE 1A. 2A. 3A. 4A

TENSILE AS SHIPPED. KSI(MPA) 110.0(758)

MAX QUENCH HARDNESS. HRC - 61 - 1925 F(1052 C) 30 MN OIL TREAT

INCLUSION RATING - ASTM E45 METHOD D

ID	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY	THIN	HEAVY
3X	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3A	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FRACTURE GRAIN SIZE: 8

CARBIDE SEGREGATION - FREE FROM EXCESSIVE SEG (VILELLAS)

DECARB - NONE (VILELLAS)

MAX QUENCH HARDNESS. HRC - 61 - 1875 F(1024 C)

30 MN AIR COOL

CONTINUED ON NEXT PAGE

DFARS
OK

AVB
26
INSP

Diana M. Kiesel

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
Die vorstehende Zertifizierung ist nur für den zu diesem Formular bestimmten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die angegebenen Daten oder Zertifizierungen.
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

CERTIFICATE OF TESTS ABNAHMEPRUEFZEUGNIS CERTIFICAT DE CONTROLE

CERT SERIAL# 000564343


CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 200-2000 (800) 330-4572

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RESULTS CAN BE TRACKED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

01/19/10

CUSTOMER/BESTELLER / CLIENT

SELLER/VERKÄUFER / VENDEUR PAGE 2 OF 2

ABBOTT BALL COMPANY
MIKE CHUBET MTL'S MGR
RAILROAD AVENUE
WEST HARTFORD ,CT 06110

ALN

CUSTOMER ORDER NO/BESTELL-NR./N° DE COMMAN DE	CARPENTER NUMBER/NR./DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
213280	W49B41	09/11/06	659

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE 548226
BILLET CHECK CHEMISTRY(WT%):

3A (TOP) C
3X (BOTTOM) .06
 .04

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872-1. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

DATE REVISED: 01/19/10

DEANA KISSLING
MET RELEASE REQUIREMENTS ANALYST
CARPENTER TECHNOLOGY CORPORATION

DFARS
OK

7-23-13

AVB
26

Deana M. Kissling

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

1355671

NAME

SPINDLE

CLERK: GV NC DS

TRI STAR METALS, LLC.

1201 S. ADAMS AVE.

FREEPORT, IL 61032

An ISO 9001:2008 Registered Company

CERTIFICATE DATE: 3/6/13 CUSTOMER: COPPER & BRASS SALES
ORDER#: 194933 CUSTOMER PO#: 5400169032-R05
MATERIAL: 17-4PH DESCRIPTION: .130" X 12"
HEAT NUMBER: E120543 QTY. SHIPPED: 863 LBS
CONDITION: ANNEALED PART #: XSSRD05808

CHEMICAL COMPOSITION

C	Mn	Si	S	P	Ni	Cr	Mo	Other Elements
0.0160	.7700	.3560	.0260	.0250	4.6900	15.4500	.2500	Cu=3.3590 Co=.0600 Ti=.0050 Nb=.2740 Al=.0030 B=.0015 Sn=.0140 N=.0260 V=.0700 W=.0200 As=.0090 Ca=.0020 Ta=.0010 Pb=.0002

MECHANICAL VALUES

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
143	125	9	63	286 HB

H900 AFTER HEAT TREAT CAPABILITIES 900F 1 HR AIR COOL

TENSILE (KSI)	YIELD (KSI)	ELONGATION (%)	REDUCTION OF AREA (%)	HARDNESS
211	197	17	48	429 HB

ADDITIONAL REMARKS:

This material meets the chemistry specifications for: ASTM A564-04, RoHS COMPLIANT,
SAE AMS 5643R. DFARS COMPLIANT.

MATERIAL IS FREE FROM MERCURY CONTAMINATION. EN10204 3.1.B
MELT ORIGIN: ENGLAND

MATERIAL IS MANUFACTURED IN THE UNITED STATES OF AMERICA

I hereby certify that this data is correct as contained in the records of this company.

QUALITY CONTROL REPRESENTATIVE:

Form# 7.9.0.0.4 Rev C

James P. Elliott - Quality Process Manager



APR 20 2013

LOT #1337628

From: ThyssenKrupp Materials NA

Cust. AVIBANK MFG INC

Del.: 2402421035

CstAr

CstOr 729445

Wgt.: 269.000 LB

Date 04/13/2013

OUTO KUMPU

73776

NORM SPECIFICATION NORME
17/4PH(630) Rev 09-13-11 (UNS S17400) COND. A

Waffen Nr. Kass. Vorder Nr. Kass. Nummer Kass. Nr.	AV196621/02
Umschlagnummer Kass. Nr. Kass. Nr.	SOFTENED AND DESCALED
Produkt Art Produkt	8.00 mm Round
Stückzahl Güter Güter	3 rod coils for 2.016t
Schwarz Nr. Kass. Nr. Kass. Nummer	E120543

Schmelzanalyse				Cast Analysis				Analyse de Coulée			
%C	%Si	%Mn	%P	%S	%Cr	%Mo	%Ni	%Ti	%Nb	%Al	%B
0.0180	0.3580	0.7700	0.0280	0.0280	15.4500	0.2800	4.8900	0.0050	0.2740	0.0030	0.0015
%Cu	%Zn	%N	%V	%W	%As	%Co	%Ta	%Pb			
0.0600	3.3590	0.0140	0.0260	0.0700	0.0200	0.0090	0.0020	0.0010	0.0002		

Mech and phys Eigenschaften		Mechanical and Physical Properties			Caractéristiques mécaniques	
0.2%PS kPSI	1.0%PS kPSI	UTS kPSI	RA%	Korngröße Grain Size Taille de grain	Dehnung % Elongation % Allongement %	Hard Hardeness Dureté
113.665	133.290	136.916	88.3	7.5 7.5	3.5	326.00
Decarb	Max	Batch Average	Batch Percentage	Cleanness ABCD<1		
				Inter-crystalline Corrosion Test		

Additional Information
 .Delta Ferrite Content - 0.04%
 H900 results-
 Rp0.2 197kpsi
 Rm 211kpsi
 A40 18.7%,
 RoTA 47.9%
 HB 428
 Free from known Mercury or Radium Contamination
 Material free from welds
 Melting Practice:- EAF and AOD
 Solution annealed at 1900F +/- 25 for 1.5Hrs
 Material melted and rolled in Sheffield, England by Outokumpu Stainless Ltd.
 Ultrasonic to AMS2630 & Magnetic Particle to AMS 2303 both Pass No Chi
 or Sigma phase at 100x per ASTM E407 Macro and Micro structure OK per
 AMS 6643 Chemistry, melt practice, material integrity and capability of

EHSQ Manager

RA Embree

Rob Charlesworth

Datum
Date **03/07/2012**
Data

This order was manufactured according to a Quality System registered to ISO 9001:2009 and approved by TÜV Nord. Certificate Registration No. 44 100 116403

Swire continued by emphasising that any security arrangements made must ensure that the company was not subjected to any variable security arrangements. He said that the company was not prepared to accept any variable security arrangements.

[illegible][illegible]

Del.: 2402421035

CstOr 729445

Date 04/13/2013

Wgt.: 269.000 LB

51

APR 24 2013

LOT #1337628

John R. Zambetti

Order No: 3533554
Time 17:47:03



FRY STEEL COMPANY
Registered ISO 9001
13325 MOLETTE ST.
SANTA FE SPRINGS, CA 90670
(562) 802-2721

A08040
Cust. NO.: 737614
P.O. NO.:

CERTIFICATE OF COMPLIANCE

AVIBANK MFG INC
ATTN: ACCTS PAYABLE
P O BOX 9909
NORTH HOLLYWOOD CA 91609-1909

AVIBANK MFG
11500 SHERMAN WAY
***RECEIVING CLOSED 11:30-12**
NORTH HOLLYWOOD CA 91605-5827

01/18/13

QTY	DESCRIPTION--	ITEM CODE--	HEAT NUMBER--
	CF 2024 T4 QQA 225/6 RED		
175	BARS 5/16"RD 12'RL	84030	12062021-1
	CF 2024 T351 QQA 225/6 RED		
38	BARS 7/8"RD 12'RL	84070	121008-3-0290
3	BARS 1-1/16"RD 12'RL	84085	121009-3-0304
3	BARS 1-3/16"RD 12'RL	84095	149637
1	REM 1 X 1-1/2"FL 35"LG	88245	3341-01B

NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION(I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

**NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM
CONTAMINATION AT TIME OF SHIPMENT**

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.
*WHEN APPLICABLE

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

K830017

NAME

BUTTON

CLERK: GV NC DS

JAN 24 2013



LOT #1315418

Chip Sandoval

CHIP SANDOVAL - Q.C. MANAGER

元生實業股份有限公司

YUAN-SHENG ALUMINIUM MFG. CORP

www.ysal.com.tw

No. 58 Lane 1274, Chung Cheng Rd., Chung Li, Taoyuan, Taiwan, R.O.C.
TEL:886-3-4278991~6 / FAX:886-3-4222830 / E-mail:tw.qc@ysal.com.tw



CERTIFICATE OF QUALITY / 品質保證書

Sold by / 供應商: Yuan-Sheng Aluminium Mfg. Corp. / 元生實業
Ship to / 客戶: TUSKER INTERNATIONAL TRADING FRY STEEL
Order No. / 訂單編號: 47129-1
Material / 材質: 2024-T4 5/16"RD * 145"
Quantity / 數量: 2115 PCS
Lot No. / 批號: 12062021-1

Specification / 標準: ASTM-B211 REV 03, AMS-4120 REV R, QQ-A-225/6 REV E, AMS-QQ-A-225/6 REV A

No / 項目	Items / 名稱	Requirement / 實測要求	Unit / 單位								
1	Dimension / 規格:	0.313 - 145	in								
2	Tensile Strength / 抗拉:	>62	ksi								
3	Yield Strength / 降伏:	>45	ksi								
4	Elongation / 引長:	>10	%								
5	Hardness / 硬度:	>67	HRB								
6	Chemical composition / 成分:										
			Others Others								
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Max	Total	AL
	0.50	0.50	3.8-4.9	0.3-0.9	1.2-1.8	0.1	0.25	0.15	0.05	0.15	rem

Quality checked / 品檢:

No / 項目	Items / 名稱	Measurement result / 實測結果	Unit / 單位								
1	Dimension / 規格:	0.313 x 145	in								
2	Tensile Strength / 抗拉:	68.73	ksi								
3	Yield Strength / 降伏:	49.97	ksi								
4	Elongation / 引長:	18.93	%								
5	Hardness / 硬度:	69.9	HRB								
6	Chemical composition / 成分:	OK									
		Others									
	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Max	Total	AL
	0.3000	0.2922	4.2030	0.5880	1.5830	0.0063	0.1465	0.1035	0.05	0.15	92.8

Checked by / 測量: 楊青瑋

Approved by / 驗證: 楊銘達

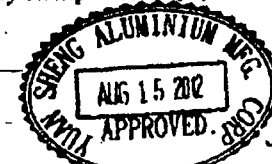
Company stamp / 公司印章

Date / 日期: AUG. 15, 2012

Date / 日期: AUG. 15, 2012

Signature / 簽名: [Signature]

Signature / 簽名: [Signature]



JAN 24 2013

This certificate is only validated when it is stamped / 品質保證書無公司章無效

品質記錄編號: QP-009-08



FRY STEEL CO. CERTIFIES THAT THIS IS
A TRUE COPY OF THE ORIGINAL MILL TEST
REPORT NOW ON FILE
RECEIVED AND INSPECTED

SEP 11 2012

LOT #1315418

CHIP BANDOVAL - Q.C. MANAGER

12062021-1

5/16 A7

CERTIFICATE OF CONFORMANCE

JESSE'S PLATING


12229 MONTAGUE ST.
PACOIMA, CA 91331
818-899-4600 VOICE
818-899-0771 FAX

Date	Invoice #
5/14/2013	52378

Bill To
AVIBANK MFG INC 11500 SHERMAN WAY NORTH HOLLYWOOD CA 91605

AS9100 & ISO 9001 CERTIFIED

P.O. No.	Terms	Due Date	Rep	Ship Date	Ship Via	Project
742610	2% 15 Net 30	6/13/2013	JV	5/14/2013	Cust. Pickup	

Qty	Item	Description
5.010	73-4AB MIL-A-8625F	REV D BUTTON ANODIZE PER MIL-A-8625F TYPE II CLASS 2 BLUE
<div style="position: relative;"> <div style="position: absolute; top: 10px; left: 10px;"> <p>CERT REVIEW</p> <p>MAIN LOT # <u>1356118</u></p> <p>COMPONENT LOT # <u>KB30017</u></p> <p>NAME <u>BUTTON</u></p> <p>CLERK: GV <u>NC</u> DS <u> </u></p> </div> <div style="position: absolute; top: 60px; right: 10px; text-align: center;">  Q. C. Review Sig. <i>[Signature]</i> Date <u>5/15/13</u> </div> </div>		
<p>WE HEREBY CERTIFY THE ABOVE PARTS ARE PROCESSED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. TEST REPORTS ARE ON FILE. ANY DISCREPANCY MUST BE REPORTED WITHIN 24 HOURS.</p>		

BY: [Signature] JORGE A VILLAGRAN

TITLE: [Signature] QA MANAGER

Fairbanks Wire Corp

260 Industrial Drive
Hampshire, IL 60140
847-683-2600

CERTIFICATION

We certify the following information for the purchaser indicated:

PURCHASER: Avibank Mfg Inc

MATERIAL: Type 17-7PH Stainless Steel Wire
Spring temper
Non metallic, soap coated finish

SIZE: 0.0180 ± 0.0003
PURCHASER'S ORDER NUMBER: 737877
SPECIFICATION NUMBER: AMS 5678F
NO. COILS & NET WEIGHT: 1x Spools
27 Lbs.
HEAT NUMBER: E120255
TENSILE: 282751 PSI

DFARS Melt: England Mill: USA Cond C: 282,751psi
CH900: 335,340psi Mercury free

ANALYSIS:

C	Mn	P	S	Si	Cr	Ni	Mo	N	Cu
0.085	0.86	0.027	0.001	0.298	16.63	7.71	0.16	0.02	0.245

CERT REVIEW

MAIN LOT #

1356118

COMPONENT LOT #

KB30031

NAME

SPRING

CLERK: GV NC ~~DS~~

AI
0.861

LT HS

MAR 08 2013



Murt Holz
Plant Manager
Fairbanks Wire Corporation

2/27/2013

Document #: QD-007 Rev: 00.11.05

LOT #1325904

C E R T I F I C A T I O N

KCM INC.
400 MIDDLE ST.
MIDDLETOWN, CT.
06457

PHONE 860-613-2647
FAX 860-613-2964

N.E.F.

DATE:9-16-13

SHOP ORDER NUMBER

DATE REC:9-11-13

P.O. NUMBER:18434

QUANTITY

PART NUMBER

PART NAME/DESCRIPTION

244#

8-32X3/8

7 PANS LOT 48701


MS24693 C48 3

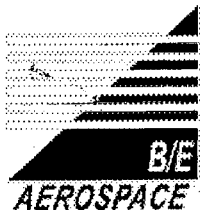
MATERIAL: S.S.

TREATMENT: CLEAN, PASSIVATE SAE AMS2700E METHOD 1 TYPE 6 CLASS 4

IT IS HEREBY CERTIFIED THAT ALL ARTICLES IN THE QUANTITIES AS CALLED FOR IN YOUR PURCHASE ORDER WERE PROCESSED IN CONFORMANCE WITH REQUIREMENTS, SPECIFICATIONS AND DRAWINGS LISTED ON THAT ORDER.

INSPECTOR





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
48	15	EA	MS21250-03004						
			QTY: 14		206648	3V FASTENERS	1ER65		
			QTY: 1		144351	3V FASTENERS	1ER65		


Jason Lewis
Vice President of Quality

03/07/14

Inv # 03/07/14

North East Fasteners Cor
 8 Tremco Dr. - P.O. Box 322
 Terryville, CT 06786
 Phone: (860)-589-3242
 Fax: (860) 589-6969
 Web: <http://www.nef1.com>
 E-Mail: nef@nef1.com



Invoice	
Date	Invoice No.
09/17/2013	52386

Packing Slip

Sold To: B/E Aerospace Consumables Management
 10000 NW 15th Terr
 Miami, Florida 33172

Ship To: B/E Aerospace Consumables Manage
 9835 NW 14th St
 Miami, Florida 33172

Customer:

PO#: 0MZL58

Shipments : 1

Ship Via: Fed Ex Freight Economy

Boxes

Weight

8

242 Lbs

Description	Complete	Lot#	Qty.	Price	Ext. Price
8-32 x 3/8" Phillips Flat 100° Marked With One Dash MS (2A) 302HQ Stainless DFARS Compliant Passivate SAE-AMS2700E Method 1 Type 6 Class 4 - MS24693-C48 - 3	No	48701	122.1 M		
Subtotal :					
Shipping :					
Total :					

Made in USA

NEF requires receipt of a Customer Debit Memo prior to issuing any credits. Please reference your P/O #, Invoice # and our RMA # on the Debit Memo.

Government Cage Code: 07ZN5

QSLM Level 2/3

ISO9001:2008 & AS9100



QSLM Level 2/3
Cage code: 07ZN5



NORTH EAST FASTENERS
CORPORATION

Telephone:
(860) 589-3242

Fax:
(860) 589-6969

Web-Site: www.NEF1.com
E-mail: nef@NEF1.com

CERTIFICATE OF CONFORMANCE

This certifies that these fasteners are in conformance to the specifications required for this order and that these fasteners sold by North East Fasteners Corporation were manufactured at 8 Tremco Dr., Terryville, CT 06786 U.S.A.

Customer Order Information			
Name : B/E Aerospace Consumables Management			
Ship Date: 09/17/2013		NEF Part #: 8320.3750PF1DMSDSSP164	
P.O. #: 0MZL58-1		Heat #: 8800	
Qty Shipped: 122.100 m		Lot #: 48701	
Descr: 8-32 x 3/8" Phillips Flat 100° Marked With One Dash MS (2A) 302HQ Stainless DFARS Compliant Passivate SAE-AMS2700E Method 1 Type 6 Class 4 DFARS PER: 252.225-7014 ALT :			
Specifications			
IFI		ISO	
Customer Print		DIN	
Metric IFI		JIS	
Other Specifications DFARS CERT-252.225-7009			
Print # : NASM24693-C48 REV 3			
Part # : MS24693-C48 REV 3			
Desc :			
Dual :			
Passed Magnetic Permeability,			


Richard L. Allen



* This product has been mfg. in an environment free from contamination by Mercury or any of its compounds.

AS9100/ISO 9001-2008

QSLM Level 2/3

CAGE Code: 07ZN5

website: www.nef1.com



QSLM Level 2/3
Cage code: 07ZN5



NORTH EAST FASTENERS
C O R P O R A T I O N

Telephone:
(860)-589-3242
Fax:
(860)-589-6969
Website: www.nefl.com
e-mail: nef@nefl.com

PO Number: 0MZL58-1

Lot Number: 48701

Heat Number: RX8800

Specs: NASM24693

Date: 09/13/2013

Lot Size: 550.00

Description: 8-32 x 3/8" Phillips Flat 100° Marked With One Dash MS (2A) 302HQ Stainless DFARS Compliant
Passivate SAE-AMS2700E Method 1 Type 6 Class 4

Axial Tensile Results

Requirements : 1120 Lbs Min

Sample	Ultimate Tensile Strength (Lbs)
1	1471
2	1483
3	1475
4	1482
5	1481
6	1476
7	1477
8	1482

Joe Longo

Quality Control Manager



All tests listed on this certification have been performed in accordance with the required specifications named above. Calibrations are in accordance with ISO10012-1. The analysis reported on this certification is in accordance with North East Fasteners Quality Manual guidelines and methods.



**Cincinnati
METALS
Company, Inc.**

8261 Cornell Road.
Suite 620
Cincinnati, OH 45249
Ph: 800-999-2600
Fax: 513-755-9603

TEST CERTIFICATE

Bill To:
**NORTH EAST FASTENERS CORP.
P.O. BOX 322
TERRYVILLE, CT 06786**

Ship To:
**NORTH EAST FASTENERS CORP.
8 TREMCO DRIVE
TERRYVILLE, CT 06786**

Customer PO#: 072313

Customer Part #:

Invoice Date: 7/26/2013	CMC SO: 24235	Ordered: 2,210
Invoice: 18652	Line: 12	Shipped: See Tags
	Item: 3021400HQNM.CTD	
Item Desc: .1400 DIA 302HQ SS WIRE X	SPECS ASTM A-493/05, ISO A3506-A2, QQ S-763F, SAE AIR4127	
Certification Nbr: RMI/SS/4574		

MATERIAL TEST RESULTS

Heat: 8800

Chemical Composition %

	<u>C</u>	<u>MN</u>	<u>P</u>	<u>S</u>	<u>SI</u>	<u>CR</u>	<u>NI</u>	<u>CU</u>	<u>MO</u>	<u>N</u>
Actual:	0.015	0.6980	0.029	0.001	0.488	17.324	9.384	3.094	0.000	0.000

Mechanical Properties

<u>Tensile Strength (KSI):</u>	<u>Country of Origin (Melt)</u>	<u>Alt Heat Number</u>	<u>DFAR Compliant (Y/N)</u>
76.84	FRANCE	235016	YES
			252.225-7009

Tag: 27195 S 24235 2,210 lb
Total Weight: 2,210 lb

received
0724-13 PA

Material Test Results and Specifications are provided to
Cincinnati Metals Company by the issuing mill.

John Cooper, QC

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4878 State Street Bettendorf, IA 52722

Ship From: RIVERSDALE, IA.

1365375 B.L. No. 0 Invoice No. Alcoa No. Item
 Ship Date 2011-07-11 6064760 00000 1000294940-2 DG-94940-01-2
 P.O. No./Con Contract No. Customer Alcoa Item
 43-95818 BRALCO-IA NIBIDA 0041015470807

This report shall not be reproduced, copied, or used in any way without the written approval of the Quality Department. No alterations, additions or other changes to this report shall be made without the written approval of the Quality Department. The report of this inspection shall be the property of Alcoa Inc. and shall remain confidential. No part of this report shall be disclosed to any third party without the written approval of Alcoa Inc.

Inspection Summary
 Location: Davenport, Iowa
 Quantity: 10000
 Date: 7/11/11
 Inspector: [Signature]

Page 2 of 2

COR: D148786.30 - Specification Limits (cont.)

Chemical Composition										Other	
Alloy 1230										Aluminum	
Loc: 634314										99.30	
Temp Dir										Test	
Long Transv.										2	
T3										60.7	
Cast Number										18.5	
H60581										0.05	
Actuals										0.13	
SI										4.5	
FE										0.62	
CU										1.5	
MG										0.00	
CR										0.05	
ZM										0.02	
TI										0.03	

This material was melted in the United States or a Qualifying Country [REF DPM 225.872.1(a)]; it was manufactured in the United States

Sold to: MOELLER MFG & SUPPLY PO: 106590 Part: Order No.: 63679

TR clerk signature: Freddie Emery

Bit Men Rk

P.O. ONX608
 P.N. MS1149DN949J/AN960JD9
 REV. 5-21 LOT # 9650 4/25/13
 MOELLER MFG. & SUPPLY, INC.
 805 E. CERRITOS
 ANAHEIM, CA 92805

Reid Metal Finishing
3110 West Harvard
Santa Ana, CA 92704
Phone: (714) 549-3771
Fax: (714) 549-3008

CERTIFICATION

P/L # 73837

05/14/2013

SOLD TO:

MOELLER MFG AND SUPPLY
805 EAST CERRITOS AVE
ANAHEIM, CA 92805

SHIP TO:

MOELLER MFG AND SUPPLY
805 EAST CERRITOS AVE
ANAHEIM CA 92805

Ship:

Net 30 Days

UNITS SHIPPED	PART	DESCRIPTION	PO	RMF	REF
25,000 qty. Per: lb. 0 B/O	NAS1149DN949J REV 5	WASHER	116141	76240	JOB#9650
	22.00 lbs.				

WE HEREBY CERTIFY COMPLIANCE TO THE BELOW REFERENCED PROCESS SPECIFICATION(S)

Chemical Film Type I Class 3 (Hexavalent)
REF: MIL-DTL-5541

Color: GOLD
Rev: F

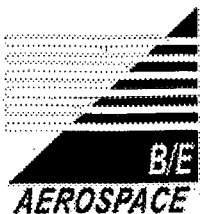
Q.C. MANAGER:



Processes are performed by RMF in accordance with the latest revisions or superseding specifications. This certification also meets the requirements for designs and drawings developed under older revisions and/or non-current specifications. An Electrode Technologies, Inc., Company.

BIE AER PL

P.O. DNXEO8
P.N. NAS1149DN949J/AN960J09
REV. 5-21 LOT # 9650 4/25/13
MOELLER MFG. & SUPPLY, INC.
805 E. CERRITOS
ANAHEIM, CA 92805



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR	DATE	EXP	DATE
38	25	EA	MS17984C413		1356118	AVIBANK MFG.	84256				


Jason Lewis
Vice President of Quality

03/06/14



3-V FASTENER CO., INC.

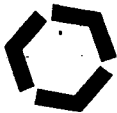
3-V Fastener Co., Inc.
320 Reed Circle
Corona, CA 92879
Tel: 951-734-4391
Fax: 951-734-0127
www.3VFasteners.com

PACKING LIST

SHIPPED TO:
B/E AEROSPACE
9835 NW 14TH STREET
MIAMI FL 33172

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
141327	109325	1661697	8M5450	04/12/2013

1.101	MS21250-03004 Rev. 1	N/A	206648		17,300
					17,300

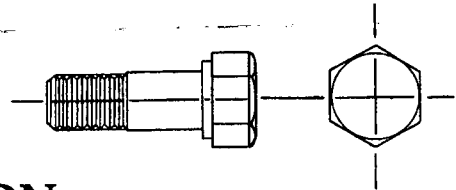


3V™ FASTENERS

PRECISION AEROSPACE FASTENERS

a **PEM®** Company

320 Reed Circle • Corona, CA 92879
Tel: 951-734-4391 • FAX: 951-734-9488



TEST CERTIFICATION

Cert # : 58591 Cert Date: 04/12/13 LOT #: 206648 Page: 1
MFG DATE: 10/16/12
Cust # : 141327 P.O. #: 8M5450
Customer : B/E AEROSPACE P.O. Qty: 17800
Ship To : MIAMI, FL. Ship #: 1661967
Ship Qty: 17300
Part #: MS21250-03004 MFG. Part #: NASM21250-03004 REV.1
Material Spec: AMS6322N Heat #: 10111570
Type: 8740 Mill, Vendor: CHARTER STEEL/WIRE TECH
Code: 12992 Procure Spec: NASM8831 REV.4

Hardness per NASM1312-6, ASTM E 18 or E 384

Minimum Requirement: 39-43 HRC.

40.0	40.0	41.0	41.0	41.0
41.0	41.0	41.0	41.0	41.0
42.0	42.0	42.0	42.0	42.0

Metallurgical Tests

Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information
THREADS INSPECTED PER MIL-S-8879C N.3, AS8879D OR MIL-S-7742D A
MACRO AND MICROSTRUCTURE SATISFACTORY 5 PCS
HEAT TREAT PER AMS2759/1E BY QUALITY HEAT TREAT #122177
CAD PER AMS-QQ-P-416C TYII CL.2 BY SWP #124025
100% MAG PER ASTM E 1444/E1444M-11 BY ACTIVE #124493
HYDROGEN EMBRITTLEMENT PER NASM1312-5 N/C BY ATLAS #106229

BAE Aerospace Inc. - Consumables Management
Self.



Signature and Stamp:
Date: 4/12/13

THIS TEST CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF 3V FASTENERS CO., INC. TESTING LABORATORY.

THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT.

3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V. ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008.

SAI GLOBAL CERT-0049384, CAGE CODE 1ER65, COO:USA

BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085.

THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR


ROBERT CANTILLO

3V FASTENERS CO., INC.		FINAL INSPECTION REPORT			PG 1 OF 2	
PART NUMBER	REV.	LOT #	LOT SIZE	SAMPLE SIZE		
MS21250-03004	1	206648	17520	315020		
DESC: BOLT TEN EXT WRENCH 12PT		PRINT NUMBER		SAMPLING PLAN		
FLANGED 10/32 X .690		NASM21250		NASM8831 TBL XII, S-3		
PRINT CHARACTERISTIC	PRINT REQ.	ACTUAL	ACC.	REJ.	GAGE EQUIPMENT	
**HEAD MARKING	MS21250 LOGO	MS21250 LOGO	✓		VISUAL/10X	
**LENGTH	±.010 .700-.680	.698-.690	✓		CALIPER	
**GRIP LENGTH	±.010 .260-.240	.253-.250	✓		CALIPER/OPT.COMP.	
**THREAD PITCH DIA.	.1697-.1674	.1682-.1676	✓		TRI-ROLL	
**THREAD FUN. DIA.	.1697-.1674	.1696-.1685	✓		TRI-ROLL/RING GAGE	
**THREAD MAJOR DIA.	.1875-.1840	.1874-.1858	✓		MICROMETER	
**THREAD ROOT RADIUS	.0056-.0047	.0055-.0048	✓		OPTICAL COMPARATOR	
**THREAD MINOR DIA.	.1539-.1497	.1520-.1515	✓		TRI-ROLL/OPT.COMP.	
**INCOMPLETE THREADS	.062 MAX.	<.062	✓		OPTICAL COMPARATOR	
B GRIP DIAMETER	.1895-.1885	.1892-.1885	✓		MICROMETER/OPT COMP	
A COLLAR DIA.	.350-.340	.347-.341	✓		CALIPER	
Q LAND THICKNESS	.065-.045	.063-.059	✓		OPTICAL COMPARATOR	
**COLLAR ANGLE	47°-43°	45°-44°	✓		OPTICAL COMPARATOR	
R RADIUS UNDER HEAD	.041-.031	.038-.032			OPTICAL COMPARATOR	
H HEAD HEIGHT	.275-.255	.275-.273	✓		CALIPER/MICROMETER	
f WRENCH POINT DIA.	.2898-.2780	.2830-.2815	✓		CALIPER	
W WRENCH FLAT DIA.	.251-.245	.249-.246	✓		CALIPER/MICROMETER	
**CHAMFER TOP OF HEAD	32°-28°	32°-30°	✓		OPTICAL COMPARATOR	
**CHAMFER DIA TOP OF HD	.250-.235	.241-.237	✓		OPTICAL COMPARATOR	
12 FIN THD, B/S, RAD, GRIP	32 Ra MAX.	<32RA	✓		COMPARATOR GAGE/10X	
12 FIN. ALL OTHERS	125 Ra MAX.	<125RA	✓		COMPARATOR GAGE/10X	
10 BURRS/SHARP EDGES	.016-.003	.016-.003	✓		VISUAL/10X	
INSP. PERFORMED & ACCEPTED BY:		<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> 3V INSP 09 </div>		DATE: April 11, 2013		
REPORT PREPARED BY: DAN HENSON		5 DATE: February 8, 2013 144351				

FORM 11-1, REV 5 03/17/98

NOTES: MFG DATE; 10/16/12
 ** = PRINT DETAIL REF NASM8831
 * = PER INCH OF LENGTH

"Sample (s): Customer Supplied"

TEST REPORT



106229
2-9-13



ATLAS TESTING LABORATORIES, INC.

9820 6th Street, Rancho Cucamonga, CA 91730

909-373-4130

FAX 909-373-4132

TW/IG

PO# 106229

DATE: 2/8/13
ATL# 328528

CLIENT: 3V FASTENERS
ATTN: NICOLE MATTHESON
320 REED CIRCLE
CORONA, CA 92879-1349

PN# MS21250-03004
ROUTE# 206648
QTY: 5 PCS.
LOT# 17,743

ALLOY: 8740

SPEC: MS 21250 REV. L, NASM 8831 REV. 3

HYDROGEN EMBRITTLEMENT: (METHOD - AMS-QQ-P-416C, NASM 1312-5 N/C)

Test Temperature:	Room Temperature
Type of Specimen	Fastener
Actual Size:	.1900-32
Load (lbs):	3,128 lbs
Pen Load (lever arm ratio 20 to 1):	156.4 lbs
Test Duration:	23.1 hrs.
Results:	No Failure / Test Discontinued
Number of samples tested:	Five (5)
Minimum Requirements:	Stress 80% of 3,128 lbs. for 23 hrs.

ATE# 944-A

MAGNETIC PARTICLE INSPECTION: (METHOD - ASTM-E1444/05)

Five (5) samples tested all Satisfactory

Remarks: Conforms to requirements.

Respectfully Submitted:


Pete B. Salazar, General Manager

Date: 2/8/13

ATLAS TESTING SUBMITS THIS REPORT AS THE CONFIDENTIAL PROPERTY OF OUR CLIENT. REPRODUCTION IS AUTHORIZED, BUT ONLY IF IN FULL. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT INFORMATION TO THIS REPORT MAY BE PUNISHABLE UNDER FEDERAL LAW.

ACT V E



**MAGNETIC
INSPECTION, INC.**

4-10-13 124493



9356 1/2 San Fernando Road, Unit B • Sun Valley, CA 91352
(818) 504-0677 • FAX (818) 504-1559

SOLD TO: 3V FASTENERS
320 REED CIRCLE
CORONA, CA 92879
(951) 734-4391

TERMINAL

DATE CERTIFIED: 04-09-2013	DATE RECEIVED: 02-04-2013	DATE TESTED: 04-09-2013	CUSTOMER P.O.: 124493/00027491
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17592 168#	MS21250-03004 10/32 X .690 MAG
	12PT HD R/N# 206648-140.00



MATERIAL / HEAT TREAT / STATUS OF PARTS 8740 / FINAL

PASSIVATE

Other

MAGNETIC SPECIFICATIONS

ATIONS
AUTM-E-1444/E1444M-12 NAB18031

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected
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17322

Reason Rejected

FLUORESCENT RETRANT SPECIFICATIONS

Acceptance Criteria

Accepted:	Barbara	Accepted:	Barbara
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Reason Rejected

DO NOT LOVE 21 REYES PERNANDEZ

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspection & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION / TEST / REPORT

Southwest Plating Company, LLC

1344 W. Slauson Ave.
Los Angeles, CA 90044-2824
Telephone (323) 753 - 3781
Fax (323) 753 - 9472

CERTIFICATION

124025



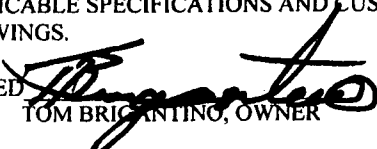
DATE	INVOICE #
1/31/2013	130009

02-01-13

BILL TO
Three V. Fasteners 320 Reed Circle Corona, CA 92879-1349

SHIP TO
Three V. Fasteners 320 Reed Circle Corona, CA 92879-1349

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.	PROJECT
124025	Net 30		1/31/2013			

QUANTITY	ITEM CODE	DESCRIPTION	PRICE EACH	AMOUNT
	# OF PIECES	17743	0.00	0.00
	PART NUMBER	MS21250-03004	0.00	0.00
	PANS	4	0.00	0.00
	JOB NUMBER	206648-120.00	0.00	0.00
	POUNDS	167.50	0.00	0.00
	MATERIAL	8740	0.00	0.00
		PO#00826091	0.00	0.00
	41	CAD PLATE TYPE 11 CL 2 PER AMS-QQ-P-416C	0.00	0.00
	10	BAKE 23 HOURS @ 375 DEGREES F AFTER PLATE	0.00	0.00
		WITHIN FOUR HOURS AFTER PLATE		
	CERT	WE HEREBY CERTIFY THAT THE PROCESSING AND INSPECTION PERFORMED ON PARTS BY THIS PURCHASE ORDER ARE IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS AND CUSTOMER DRAWINGS.	0.00	0.00
	SIGN 1	SIGNED  TOM BRIGGANTINO, OWNER	0.00	0.00
		DATE 1/31/2013		

Claims must be made within 5 days of receipt of goods. No returns accepted without our approval.

Total

\$0.00



3305 BURTON AVE.
BURBANK
CALIFORNIA 91504
323-849-6604
818-840-8212
FAX 818-953-5056
www.qualityht.com

CERTIFICATION

122177
CERTIFICATION NUMBER
420247

3 V FASTENERS COMPANY INC 320 REED CIRCLE CORONA, CA 92879	SHIP TO 3 V FASTENER COMPANY INC 320 REED CIRCLE CORONA, CA 92879	12-10-12
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CUSTOMER NUMBER 0001433	DATE RECEIVED 11/28/12	CUSTOMER P.O. NUMBER 00818680	CUSTOMER SHIPPER 122177/122178
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QUANTITY 18153	WEIGHT 177	PART NUMBER / DESCRIPTION MS21250-03004 10/32 X .690 12PT HD ROUTER#206648-40.00 HT TO 180 KSI MIN REF PO#00818681 FATIGUE RATED
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MATERIAL 8740	HARDNESS 40-43 HRC	MAX-CROSS SECTION .190	CASE DEPTH	CORE HARDNESS
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SPECIFICATIONS AMS 2759/1 E PYROMETRY PER AMS 2750 D ASTM A 380-06 GLASSBEAD BLAST ONLY

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	O-MED & TEMP	DATE
RUN PARTS IN FLAT BASKETS NO MORE THAN 1 INCH DEEP AND NO MORE THAN 100 LBS PER BASKET. THIS WILL BE 2 PANS MAX PER BASKET, 2 BASKETS MAX. RUN A METAL TUBE IN THE BOTTOM BASKET TO SUPPORT THE TOP BASKET, AND ALLOW OIL FLOW FOR PROPER QUENCHING.										
WASH			QW1		.25	Y				12/04
AUSTENITIE	1550	1:00	Q39	1550	11:15	11:55	12:55	.40	OIL	12/05
WASH			QW1		.08	Y				12/05
TEMPER 15	800	3:30	Q40	800	14:30	15:35	19:05	AIR	A/C	12/05
VERIFY			VERIFY		.02	Y				12/06
GLASSBEAD			GLASS		4.00	Y				12/10

DEC 10 2012

HARDNESS: 40-43 HRC QTY TESTED: 50 QTY ACCT: 18153 QTY REJT: 0

SPECTOR
MARIO MEDRANO

DATE
12/10/12

QUANTITY MANAGER
JUAN ALCALA for JOSE VELAZQUEZ

Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are implied, as a result of the thermal processing and/or hardness testing cited this Process Certification. Material processed in a mercury-, radium- and asbestos-free environment. Unless otherwise specified above, for all AMS material specifications, no qualification or periodic testing has been performed. FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATEST EDITION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

3V Fasteners
320 Reed Circle
Corona, CA 92879-1349
USA



WORK ORDER
085905

12992

HEAT NO.
10111570

SALES ORDER / RLS

841207 / 1

ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CERT# 911.01

CUSTOMER P.O. 103165	CUSTOMER PART 2810-2820 8740	QUANTITY 406 Lbs	CARRIERS 1	LADING NO 00092206	SHIPMENT DATE 09/07/2011			
SPECIFICATION T338740-102815A A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.281/0.282 Specifications: AMS2301H, AMS6322N, MIL-S-6049A, AMEND. 1, AMS-S-6049-A, M-001-AL								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C .39	Si .26	Mn .84	P .009	S .007	Cu .10	Ni .43	Cr .53	Mo .22
Physical Properties								
Grain Size Jominy 1 6 J5=51	Jominy 2 J8=44	Jominy 3 J10=39	Inclusions S2-R1-C2	Macro GOOD	Cleanliness F&S=0	Mill Source Charter		
Country of Origin USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	KSI	80.7						
Decarb (Total)	In	0.00						
Yield Strength	KSI	68.6						
% Elongation	%	29						
% Reduction of Area	%	74.6						
Rockwell Hardness B Scale	HRB (s)	84						
1. 193 2. 217 410# 2 coils 9-8-11 8L								
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.</p> <p>The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)</p> <p>"LATEST REVISIONS OF ASTM"</p> <p>Material is free of mercury, radium, or alpha contamination.</p>								

CHARTER
STEEL

**CHARTER
STEEL**

A Division of
Charter Manufacturing Company, Inc.

EMAIL



CHARTER STEEL TEST REPORT
Reverse Has Text And Codes

12992 9-9-11

1658 Cold Springs Road

Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

Wiretech Incorporated
6440 East Canning Street
Attn: Andre Stephan
Los Angeles, CA-90040

Cust P.O.	6696-5
Customer Part #	8740C1A090-C-R
Charter Sales Order	70023291
Heat #	10111570
Ship Lot #	4085650
Grade	8740 R SK FG AQ 23/64
Process	HRSA
Finish Size	23/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10111570												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM	.39	.84	.009	.007	.26	.43	.53	.22	.10	.006	.001	
%Wt												
	AL	N	B	TI	O2	NB						
	.024	.0060	.0001	.002	.0011	.002						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	57	56	56	55	51	50	46	44	41	39	38	37
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	36	35	33	33	33	31	30	30	31	30	30	29

JOMINY SAMPLE TYPE ENGLISH = B JOMINY LAB = 0358-01
E45 INCLUSION LAB = 0358-02

Cleanliness		ASTM-E45 Method A							
		A	B	C	D				
	Thin	.5	1.2	.0	.5				
	Heavy	.0	.0	.0	.0				
LOC1 = 1-3	AT = .5	AH = .0	BT = .5	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
LOC2 = 2-3	AT = .5	AH = .0	BT = 2.0	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
LOC3 = 3-3	AT = .5	AH = .0	BT = 1.0	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
LOC4 = 3-6	AT = .5	AH = .0	BT = 1.0	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
LOC5 = 4-3	AT = .5	AH = .0	BT = 1.5	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
LOC6 = 4-11	AT = .5	AH = .0	BT = 1.0	BH = .0	CT = .0	CH = .0	DT = .5	DH = .0	
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1									
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00									
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00									
CHEM. DEVIATION EXT. -GREEN =									

REDUCTION RATIO = 299:1

Test Results of Processing Lot# 4085476, 4085650					TENSILE LAB = 0358-02 RA LAB = 0358-02 RB LAB = 0358-02
# of Tests	Min Value	Max Value	Mean Value		
TENSILE	2.0	86.7	87.0	86.8	
REDUCTION OF AREA	2	67	67	67	
ROCKWELL B	2	83	85	84	

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 85.0

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-09

Charter Steel
Saukville, WI, USA



This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Janice Barnard
Manager of Quality Assurance
07/28/2011

Rem: Load1, Fax0, Mail0



**CHARTER
STEEL**

A Division of
Charter Manufacturing Company, Inc.

EMAIL

12992 9-9-11

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570



CHARTER STEEL TEST REPORT
Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Attn: Andre Stephan
Los Angeles, CA-90040

Cust P.O.	6696-5
Customer Part #	8740C1A090-C-R
Charter Sales Order	70023291
Heat #	10111570
Ship Lot #	4085650
Grade	8740 R SK FG AQ 23/64
Process	HRSA
Finish Size	23/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

Charter Steel
Saukville, WI, USA

Rem: Load1, Fax0, Mail0



This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Manager of Quality Assurance
07/28/2011

12992-9-9-11

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:



Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.





3-V FASTENER CO., INC.

3-V Fastener Co., Inc.
320 Reed Circle
Corona, CA 92879
Tel: 951-734-4391
Fax: 951-734-0127
www.3VFasteners.com

PACKING LIST

SHIPPED TO:
B/E AEROSPACE
9835 NW 14TH STREET
MIAMI FL 33172

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
141327	109325	1622029	8M5450	02/08/2013

1.001	MS21250-03004 <i>Rev. 1</i>	N/A	144351	6,840
				6,840

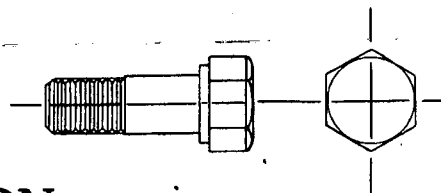
**3V™ FASTENERS**

PRECISION AEROSPACE FASTENERS

a **PEM®** Company

320 Reed Circle • Corona, CA 92879

Tel: 951-734-4391 • FAX: 951-734-9488

**TEST CERTIFICATION**

Cert # : 57603 Cert Date: 02/08/13

LOT #: 144351

Page: 1

MFG DATE: 10/15/12

Cust # : 141327

P.O. #: 8M5450

Customer : B/E AEROSPACE

P.O. Qty: 7200

Ship To : MIAMI, FL.

Ship #: 1622029

Ship Qty: 6840

Part #: MS21250-03004

MFG. Part #: NASM21250-03004 REV. 1

Material Spec: AMS6322N

Heat #: 10099610

Type: 8740

Mill, Vendor: CHARTER STEEL/WIRE

Code: 13034

Procure Spec: NASM8831 REV. 4

Hardness per NASM1312-6, ASTM E 18 or E 384

Minimum Requirement: 39-43 HRC

40.0	40.0	40.0	40.0	40.0
40.0	41.0	41.0	41.0	41.0
41.0	41.0	41.0	42.0	42.0

Metallurgical Tests

Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information

THREADS INSPECTED PER MIL-S-8879C N.3, AS8879D OR MIL-S-7742D A.1

MACRO AND MICROSTRUCTURE SATISFACTORY 5 PCS

HEAT TREAT PER AMS2759/1E BY QUALITY HEAT TREAT #121431

CAD PER AMS-QQ-P-416C TY11 CL.2 BY SOUTHWEST PLATING #123348

100% MAG PER ASTM E 1444/E1444M-11 BY ACTIVE #124310

HYDROGEN EMBRITTLEMENT PER MIL-STD-1312-5A BY ELEMENT #106170

THIS TEST CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF 3V FASTENERS CO., INC. TESTING LABORATORY.

THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT.

3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V. ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008.

SAI GLOBAL CERT-0049384, CAGE CODE 1ER65, COO:USA

BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085.

THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR

DANIEL E. HENSON



PART NUMBER	REV.	LOT #	LOT SIZE	SAMPLE SIZE
MS21250-03004	1	144351	6933	200020

DESC: BOLT TEN EXT WRENCH 12PT	PRINT NUMBER	SAMPLING PLAN
FLANGED 10/32 X .690	NASM21250	NASM8831 TBL XII, S-3

PRINT CHARACTERISTIC	PRINT REQ.	ACTUAL	ACC.	REJ.	GAGE EQUIPMENT
**HEAD MARKING	MS21250 LOGO	MS21250 LOGO	✓		VISUAL/10X
**LENGTH ±.010	.700-.680	.700-.694	✓		CALIPER
**GRIP LENGTH ±.010	.260-.240	.252-.250	✓		CALIPER/OPT.COMP.
**THREAD PITCH DIA.	.1697-.1674	.1692-.1682	✓		TRI-ROLL
**THREAD FUN. DIA.	.1697-.1674	.1697-.1688	✓		TRI-ROLL/RING GAGE
**THREAD MAJOR DIA.	.1875-.1840	.1871-.1858	✓		MICROMETER
**THREAD ROOT RADIUS	.0056-.0047	.0053-.0048	✓		OPTICAL COMPARATOR
**THREAD MINOR DIA.	.1539-.1497	.1510-.1507	✓		TRI-ROLL/OPT.COMP.
**INCOMPLETE THREADS	.062 MAX.	<.062	✓		OPTICAL COMPARATOR
B GRIP DIAMETER	.1895-.1885	.1889-.1886	✓		MICROMETER/OPT COMP
A COLLAR DIA.	.350-.340	.349-.345	✓		CALIPER
Q LAND THICKNESS	.065-.045	.061-.057	✓		OPTICAL COMPARATOR
**COLLAR ANGLE	47°-43°	46°-45°	✓		OPTICAL COMPARATOR
R RADIUS UNDER HEAD	.041-.031	.034-.032	✓		OPTICAL COMPARATOR
H HEAD HEIGHT	.275-.255	.273-.369	✓		CALIPER/MICROMETER
f WRENCH POINT DIA.	.2898-.2780	.2850-.2820	✓		CALIPER
W WRENCH FLAT DIA.	.251-.245	.249-.247	✓		CALIPER/MICROMETER
**CHAMFER TOP OF HEAD	32°-28°	32°-30°	✓		OPTICAL COMPARATOR
**CHAMFER DIA TOP OF HD	.250-.235	.242-.238	✓		OPTICAL COMPARATOR
12 FIN THD, B/S, RAD, GRIP	32 Ra MAX.	<32RA	✓		COMPARATOR GAGE/10X
12 FIN. ALL OTHERS	125 Ra MAX.	<125RA	✓		COMPARATOR GAGE/10X
10 BURRS/SHARP EDGES	.016-.003	.016-.003	✓		VISUAL/10X

 INSP. PERFORMED &
ACCEPTED BY:


DATE: February 8, 2013

REPORT PREPARED BY: DAN HENSON

5
DATE: February 8, 2013 144351

FORM 11-1, REV 5 03/17/98

NOTES:

MFG DATE: 10/15/12

**= PRINT DETAIL REF NASM8831

* = PER INCH OF LENGTH



106170
2-5-13



element

Element Materials Technology
15062 Bolsa Chica
Huntington Beach, CA
92649-1023 USA

P 714 892 1961
F 714 892 8159
T 888 786 7555
info.hb@element.com
element.com

Contact: Nicole Mattheson
3v Fasteners
320 Reed Circle
CORONA, CA 92879

TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 2/1/2013
Purchase Order Number: 106170
Work Order Number VFA001-01-30-12690-1

Router No.:	144351
Part No.:	MS21250-03004
Material:	8740
Lot:	7015
Description:	MS21250-03004 & NASM8831
Specification:	MS21250-03004 (L), NASM8831 (4)

STRESS DURABILITY (EXTERNAL LOAD)

Requirements:	Load 85% of 3,910 lbs. for 23 Hours Min.
Test Temperature:	Room
Number of Samples Tested:	5
Type of Specimen:	FASTENER
Actual Size:	10-32
Load Applied:	3,324 lbs.
Discontinued After:	23 Hours
Location of Fracture:	-
Time of Fracture:	-

Tested in Accordance with AMS-QQ-P-416C and MIL-STD-1312-5A/NASM1312-5
Wet Method Magnetic Particle inspection was performed per ASTM E 1444/1444M-11.
No indications were observed.

MATERIAL CONFORMS TO SPECIFICATION

This document contains technical data whose export and re-export/ retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval may be required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

Respectfully submitted

15062 Bolsa Chica, Huntington Beach, CA 92649
(714) 892-1961 ph • (714) 892-8159 fax www.element.com

Megan E. Wolf
Megan E. Wolf
Quality Administrator

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punishable as a felony under federal law. All testing was performed in a mercury free environment. **All testing performed in accordance with the latest edition of the applicable ASTM, or other Federal Test Method in effect at the time of test.**

ACTIVE



MAGNETIC
INSPECTION, INC.

565805

2-7-13 124310



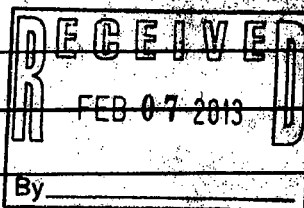
9356¹/₂ San Fernando Road, Unit B • Sun Valley, CA 91352
(818) 504-0677 • FAX (818) 504-1559

SOLD TO: 3V FASTENERS
320 REED CIRCLE
CORONA, CA 92879
(951) 734-4391

TERMS: net 30

DATE CERTIFIED:	DATE RECEIVED:	DATE TESTED:	CUSTOMER P.O.	PACKAGING METHOD
02-07-2013	01-30-2013	02-07-2013	124310/00827044	2 Pcs

7023 67# MS21250-03004 10/32 X .690 MAG
12PT HD R/N# 144351-140.00



MATERIAL / HEAT TREAT / STATUS OF PARTS 8740/FINAL

PASSIVATE

Other

MAGNETIC SPECIFICATIONS

Acceptance Criteria ASTM-E-1444/E1444M-11 NASM8831

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected
7023	0												

Reason Rejected

FLUORESCENT PENETRANT SPECIFICATIONS

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected

Reason Rejected

QC NDT Level 21 REYES HERNANDEZ

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspected & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION / TEST / REPORT

Southwest Plating Company, LLC

1344 W. Slauson Ave.
Los Angeles, CA 90044-2824
Telephone (323) 753 - 3781
Fax (323) 753 - 9472



123348
CERTIFICATION

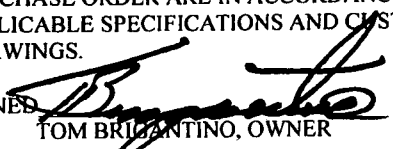
DATE	INVOICE #
1/28/2013	129976

1-29-13

BILL TO
Three V. Fasteners 320 Reed Circle Corona, CA 92879-1349

SHIP TO
Three V. Fasteners 320 Reed Circle Corona, CA 92879-1349

P.O. NUMBER	TERMS	REP	SHIP	VIA	F.O.B.	PROJECT
123348	Net 30		1/28/2013			

QUANTITY	ITEM CODE	DESCRIPTION	PRICE EACH	AMOUNT
	# OF PIECES	7097	0.00	0.00
	PART NUMBER	MS21250-03004	0.00	0.00
	PANS	2	0.00	0.00
	JOB NUMBER	144351-120.00	0.00	0.00
	POUNDS	67	0.00	0.00
	MATERIAL	8740	0.00	0.00
		PO#00825697	0.00	0.00
41		CAD PLATE TYPE 11 CL 2 PER AMS-QQ-P-416C	0.00	0.00
10		BAKE 23 HOURS @ 375 DEGREES F AFTER PLATE	0.00	0.00
		WITHIN FOUR HOURS AFTER PLATE		
	CERT	WE HEREBY CERTIFY THAT THE PROCESSING AND INSPECTION PERFORMED ON PARTS BY THIS PURCHASE ORDER ARE IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS AND CUSTOMER DRAWINGS.	0.00	0.00
	SIGN I	 SIGNED TOM BRILANTINO, OWNER	0.00	0.00
		DATE 1/28/2013		

Claims must be made within 5 days of receipt of goods. No returns accepted without our approval.

Total

\$0.00



3305 BURTON AVE.
BURBANK
CALIFORNIA 91504
323-849-6604
818-840-8212
FAX 818-953-5056
www.qualityht.com

CERTIFICATION

121431

CERTIFICATION NUMBER

419623

S
O
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3 V FASTENERS COMPANY INC
320 REED CIRCLE
CORONA, CA 92879



S
H
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P
T
O
3 V FASTENER COMPANY INC
320 REED CIRCLE
CORONA, CA 92879

11-19-12 TC

CUSTOMER NUMBER
0001433

DATE RECEIVED
11/08/12

CUSTOMER P.O. NUMBER
00816491

CUSTOMER SHIPPER
121431/121432

QUANTITY
7215

WEIGHT
71

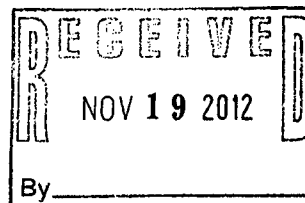
PART NUMBER / DESCRIPTION

MS21250-03004 10/32 X .690 12PT HD
ROUTER#144351-40.00 HT TO 180 KSI MIN
REF PO#00816492 FATIGUE RATED

MATERIAL	HARDNESS	MAX-CROSS SECTION	CASE DEPTH	CORE HARDNESS
8740	40-43 HRC	.189		

SPECIFICATIONS AMS 2759/1 E PYROMETRY PER AMS 2750 D ASTM A 388-06 GLASSBEAD BLAST ONLY

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	Q-MED & TEMP	DATE
RUN PARTS IN FLAT BASKETS NO MORE THAN 1 INCH DEEP AND NO MORE THAN 100 LBS PER BASKET. THIS WILL BE 2 PANS MAX PER BASKET, 2 BASKETS MAX. RUN A METAL TUBE IN THE BOTTOM BASKET TO SUPPORT THE TOP BASKET, AND ALLOW OIL FLOW FOR PROPER QUENCHING.										
WASH			QW1		.25	Y				11/13
AUSTENITIE	1550	1:00	Q39	1550	07:00	07:20	08:20	.40	OIL	11/14
WASH			QW1		.17	Y				11/14
TEMPER 15	800	3:30	Q31	800	11:35	13:15	16:45	AIR	A/C	11/14
VERIFY			VERIFY		.01	Y				11/15
GLASSBEAD			GLASS		1.00	Y				11/16



HARDNESS:41-43 HRC QTY TESTED:50 QTY ACCT:7215 QTY REJT:0

ISPECTOR
MARIO MEDRANO

DATE
11/16/12

QUALITY MANAGER
JUAN ALCALA for JOSE VELAZQUEZ

s Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are implied, as a result of the thermal processing and/or hardness testing cited this Process Certification. Material processed in a mercury-, radium- and asbestos-free environment. Unless otherwise specified above, for all AMS material specifications, no qualification or periodic testing has been performed.
L FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATEST EVISION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

3V Fasteners
320 Reed Circle
Corona, CA 92879-1349
USA



CERTIFICATION

WORK ORDER
086430

13034

HEAT NO.
10099610

SALES ORDER / RLS

9-27-11

841545 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE			
103274	.2810-.2820 8740	346 Lbs	1	00092558	09/26/2011			
SPECIFICATION T338740-102815A A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.281/0.282 Specifications: AMS2301H, AMS6322N, MIL-S-6049A, AMEND. 1, AMS-S-6049-A, M-001-AL								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C /	Si /	Mn /	P /	S /	Cu /	Ni /	Cr /	Mo /
.41	.26	.95	.009	.009	.15	.43	.42	.21
Physical Properties								
Grain Size Jominy 1	Jominy 2	Jominy 3	Inclusions Macro	Cleanliness Mill Source				
6 J5=55	J8=48	J10=42	S2-R1-C2 GOOD	F&S=0	Charter			
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	KSI	80.0						
Decarb (Total)	In	0.00						
Yield Strength	KSI	68.0						
% Elongation	%	27						
% Reduction of Area	%	71.9						
Rockwell Hardness B Scale	HRB (s)	83						
1.200 2.148 348* 2.001s 9-27-11								
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009; & 225.003(9)</p> <p>Material is free of mercury, radium, or alpha contamination.</p>								



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL



13034
1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

1-800-437-8789
FAX (262) 268-2570

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA-90040
Kind Attn :Cert To Contact

Cust P.O.	6561-4
Customer Part #	8740C1A090-C-R
Charter Sales Order	70015718
Heat #	10099610
Ship Lot #	4052271
Grade	8740 R SK FG AQ 23/64
Process	HRSA
Finish Size	23/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10099610												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM %Wt	.41	.95	.009	.009	.26	.43	.42	.21	.15	.008	.001	
	AL	N	B	TI	NB							
	.026	.0060	.0001	.002	.001							
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	59	57	56	56	55	53	51	48	45	42	40	38
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	38	36	35	35	34	32	33	30	31	31	31	29

JOMINY SAMPLE TYPE ENGLISH = B JOMINY LAB = 0358-01
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .01 AMS 2301 FREQUENCY INDIVIDUAL = .07
AMS 2301 SEVERITY AVERAGE = .01 AMS 2301 SEVERITY INDIVIDUAL = .07
CHEM. DEVIATION EXT.-GREEN =

Test Results of Rolling Lot# 1025819
REDUCTION RATIO = 299:1

Test Results of Processing Lot# 4052016,4052271						
	# of Tests	Min Value	Max Value	Mean Value		
TENSILE	2.0	85.9	91.2	88.6		TENSILE LAB = 0358-02
REDUCTION OF AREA	2	65	72	69		RA LAB = 0358-02
ROCKWELL B	2	84	88	86		RB LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 85.0

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3010 Revision = M Dated = 12-MAR-03

Additional Comments: MEETS REQUIREMENTS OF SPECIFICATIONS AMS6322N/AMS2301J/MIL-S-6049A

Charter Steel
Saukville, WI, USA



Janice Barnard
Janice Barnard
Manager of Quality Assurance
12/23/2010

Rem: Load1,Fax0,Mail0

13034

3V
LAB
04

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFARS compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSSM, CSCM/CSCR	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSCM/CSCR	ASTM E572
Macroetch	CSSM, CSCM/CSCR	ASTM E381
Hardenability (Jominy)	CSSM, CSCM/CSCR	ASTM A255; SAE J406; JIS G0561
Grain Size	CSSM	ASTM E112
Tensile Test	CSSR/CSSP, CSFP, CSCM/CSCR	ASTM E8; ASTM A370
Rockwell Hardness	All labs	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSSR/CSSP, CSFP	ASTM A892
Inclusion Content (Methods A, E)	CSSR/CSSP, CSCM/CSCR	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/11.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
26	100	EA	MS24693-S274		RWK000970	ATF, INC	95110		



Jason Lewis
Vice President of Quality

03/08/14



3550 W. Pratt Avenue
Lincolnwood, IL 60712
Phone: (847) 677-1300 Fax: (847) 677-9335
Website: www.atf-inc.com DUNS: 013488796

BILL OF LADING - SHORT FORM

B.O.L. TYPE CUSTOMER ORDER
FREIGHT CLASS - 50
FREIGHT COLLECT

Page No: 2

B.O.L. NO.	394431	B.O.L. DATE	2/27/09
CUST. NO.	HO0011	SHIP DATE	3/20/09
SHIP VIA			
CUST. PO#			
***** SEE BELOW*****			
SALESMAN		ORDER DATE	
ATF - JOHN LYONS		8/22/08	

SHIP TO
HO001101
HONEYWELL INTERNATIONAL, INC.
CONSUMABLES SOLUTIONS
700 HENRIETTA CREEK RD
ROANOKE, TX 76262-6398 USA 76262-6398

SOLD TO
HONEYWELL INTERNATIONAL, INC.
CONSUMABLES SOLUTIONS
PO BOX 981157
EL PASO, TX, USA 79998-1157

(2S)SID#394431

TERMS & CONDITIONS	PLANT OR DEST. CODE	TRAILER NO	MBOL NO	CARRIER	SCAC	F.O.B
NET 60 DAYS				YELLOW FREIGHT SYSTEM	YFSY	SHIPPING POINT

ITEM	PART NO.	DESCRIPTION	ORDER / ITM	REL NO.	SHIPMENT WGT	DOCK / DLOC	CTN	U/M	QTY. SHIPPED
	CPTN: MS 24693-5274 REVISION: K	- MS							
	Type: MASTER # CPO#: RWK000970	0931165 Wire Heat #	Serial # 8369374	Quantity 21940					
Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges Per: _____ Shipper: _____ Agent: _____									
SKID/CONTR	3 / 41	GROSS WEIGHT	1384 LBS	TARE WEIGHT	101 LBS	NET WEIGHT	1283	LBS	



CERTIFICATE OF COMPLIANCE

Where Required Fill Out The Form Completely With The
Correct Information Collected From The Following Pages.

SOLD TO	HONEYWELL INTERNATIONAL, INC.		
CUSTOMER P/N	MS 24693-S274	CUST REV	K
DESCRIPTION	10-32 X.750 PHILLIPS FLAT HEAD		
SAMPLING METHOD	ASTM B-18.18.3M	ATF P/N	F24693002
QTY INSP	21940	QTY SHIPPED	21940
		DATE OF SHIPMENT	2009-03-20
CUSTOMER PO#	0931165		
LOT NUMBER(S)	RWK000970		
CERTIFICATE NUMBER	394431		
TEST DATE	2009-03-20	HEAT TREAT #	7367040
PART CONDITION (FINISHED/UNPLATED/ETC:	FINISHED		
ORIGIN:	United States of America		

TESTS

RESULT-PASS-FAILED

DIMENSIONAL TESTING
HT TREATING (PHYSICAL/MECHANICAL)
PLATING TESTING
ANY DEVIATIONS/ADDITIONS
EXCLUSIONS FROM TEST METHOD

PASS
NA
PASS
NONE
NONE

The undersigned hereby certifies that based on our sampling plan, this part meets the required blue print specifications in this lot.

CERTIFIED BY

TITLE

QUALITY MANAGER

The Certificate Shall Not Be Reproduced Except In Full Without The Written Permission Approval of A.T.F.



P/N MS24693-S274 Rev. K

WO# RWK000970

Wire Heat# 7367040

Supplier: ATF, Inc

3550 W. Pratt Avenue • Lincolnwood, IL 60712-3798

Phone 847/677-1300 • Fax 847/677-9338

Corrosion Test Report

TEST IN ACCORDANCE WITH ASTM B-117 / GM4298P

CUSTOMER NAME: M & M

ATF PART NUMBER: F24693002 CUSTOMER P/N: MS24693-S274

PART DESCRIPTION: 10-32 X.750 PHILLIPS FLAT HEAD

SUPPLIER P.O. NUMBER: 242754 QTY: 22 M

PLATING (COATING) SPECIFICATION: .0002' min CADMIUM PLATE & CHROMATE
PER AMS-QQ-P-416, TYPE II, CLASS 3

BASE METAL: 8740 Steel

TEST REQUIREMENT:

96 hours to Red Rust

TEST START DATE: 2/12/09

O = No Attack of Red Rust or White Corrosion; B = Blister; RR = Red Rust; WC = White Corrosion

Tested Samples	Specification Requirement for White Corrosion _____ Hrs (Mark appropriate box or boxes if applicable)			Specification Requirement for Red Rust 96 Hrs (Mark appropriate box or boxes if applicable)			Record Time and Place of 1 st Evidence of RR & WC
	O	B	WC	O	B	RR	1 st Evidence of WC after _____ Hrs Location of WC: Threads <input type="checkbox"/> Yes <input type="checkbox"/> No Shank <input type="checkbox"/> Yes <input type="checkbox"/> No Head <input type="checkbox"/> Yes <input type="checkbox"/> No Shoulder <input type="checkbox"/> Yes <input type="checkbox"/> No Other <input type="checkbox"/> Yes <input type="checkbox"/> No
#1						RR	1 st Evidence of RR after 96 Hrs Area Affected by RR: Threads <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Shank <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Head <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Shoulder <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Other <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
#2							
#3							
#4							
#5							
#6							
#7						RR	

Test Result: PASS FAIL

(Mark appropriate box)

PASS

Test Completion Date: 2/14/09

Tested By: [Signature]

Approved By: [Signature]



GLOBAL FASTENER ALLIANCE



QF410_33 Rev 2 9/26/03

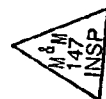
MTR
M & M
147
INSP

Inspection Data Sheet

Issue Date: 2008/10/21

O&K American Corp.
4830 W. 55th Street, Chicago, IL 60632
Tel: (773) 767-2500 Fax: (773) 767-0111

O&K



147

Customer Name: ACCURATE THREADED FASTENER

Inspection #	Grade	Condition	Shd. Size	Shape	Coating	Remarks
M870288	1022	SKFG	0.182	ROUND	PHOS/LUBE	
Process Type	Heat #	Supplier Name		Customer PO#		
CHQ-SAFS	7367040	REPUBLIC ENGINEERED PRODUC		200607		

Element	2023	1530	90/110	0/20	0/20	0/20	0/10	0/10	0/4	0/20	0/80								
Result	21	22	96	13	6	5	1	7	2	1	33								

Min	Max	
5.0	—	
Result: 6.0		

Mechanical Properties						Micro Structure				Weight		
Size	Thick	T/S	R/A	Dim-F	Dim-T	Dim-T W	SPH	Res	Kg	M&M CoS M Schedule		
0.182/0.182	0.0015	87000	80	0.0010	0.0050	0.0080	80					
2	.1819 / .1823	.0084	85518	80.1	.0000	.0000	.0000	80	2438	1105	W27978	

P/N MS24693-S274 Rev. K
WO# RWK000970
Wire Heat# 7367040
Supplier: ATF, Inc

Color Scheme:					
Customer Spec #	IF1-140 + CHEM DEV	Date		Customer Part#	20612182

Signed

[Signature]



ESTABLISHED 1947

P/N MS24693-S274 Rev. K
WO# RWK000970
Wire Heat# 7367040
Supplier: ATF, Inc

9145 KING STREET FRANKLIN PARK, IL 60131 TEL: 847-678-0200 FAX: 847-678-0758

Plating Certification

February 5, 2009

Barbara Kowalik
ATF
9145 King Street
Lincolnwood, IL 60712

Customer P. O. No: 242629

Part Description: 10-32 X 0.750 PHILLIPS
FLAT HEAD

P. O. Date: 02/5/09

Total Quantity: 2,200

Customer Lot No: N/A

Weight: 119

Belmont's Job No: 438552

Containers: 3 TOTES

Part Number: F24693002

It is hereby certified that the parts described above have been processed according to the following requirements/specifications.

CADMIUM 0.0002" - 0.0004" / Yellow Dichromate
PER QQ-P-416 TYPE II, CLASS 3

Test Results:

Plating Thickness - X-Ray	0.239 MIL	0.275 MIL	0.224 MIL	0.255 MIL	0.261 MIL
ASTM B-568	0.259 MIL	0.242 MIL	0.264 MIL	0.227 MIL	0.277 MIL

Respectfully submitted,

Roy Newman
Quality Director

The above test results relate only to the items tested and are not valid unless Belmont Plating Works stamp is present. This report shall not be reproduced except in full, without the written consent of Belmont Plating Works.

QF05-11 Rev. 1

Document of Certification

July 3, 2008

DO NOT COPY! Reproduce from Master Copy only to assure the latest revision.

pc 12/14/09 SPC
fHe



ATF, INC.
3550 W. PRATT AVE.
LINCOLNWOOD, IL 60712-3798
CONTACT: BARBARA
DATE: 2/23/2009
P.O. NO.: F24683002
W/O NO.: ATF002-02-16-39187-1

2 Pheasant Run
Newtown, PA. 18940
USA

Telephone : (215) 579-7500
Telefax : (215) 579-7591
Website : www.storksmt.com/mma

CERTIFICATION OF TESTING
ALL TESTING PERFORMED IN A MERCURY-FREE ENVIRONMENT

PART NUMBER
DESCRIPTION
SPECIFICATION


MS24696-S274 (ATF F24683002)
10-32 x .750 Phillips Flat Head
Customer Requirements

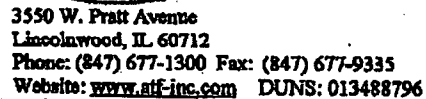
P/N MS24693-S274 Rev. K
WO# RWK000970
Wire Heat# 7367040
Supplier: ATF, Inc

Axial Tensile Results
Requirements = 60,000 PSI Min.
Tested IAW NASM 1312 #8

Sample	Ultimate Tensile Strength (PSI)	Fracture Location
1.	87,500	Thread --
2.	87,500	Thread

Two tests listed on this certification have been performed in accordance with customer requirements and all tested samples do conform to the customer requirements.

 0478-1 0478-2	Respectfully submitted <i>Peggy Wolfe</i> Peggy Wolfe Quality Administrator
	The analysis reported on this certification has been performed in accordance with Stork MMA Quality Manual, 3 rd Edition Rev. 0 Dated 04/30/07 and related procedures. The samples tested or inspected on this Certification are Certified only for the testing performed. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes. Stork Materials Testing and Inspection is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group

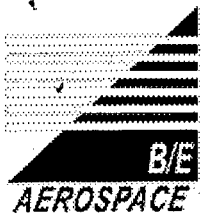


B.O.L. TYPE	CUSTOMER ORDER
	FREIGHT CLASS - 50
	FREIGHT COLLECT

B.O.L.NO.	B.O.L DATE
394431	2/27/09
CUST NO.	SHIP DATE
MO0011	3/20/09
SHIP VIA	
CUST POW	
***** SEE BELOW*****	
SALESMAN	ORDER DATE
ATF - JOHN LYONS	8/22/08

(25)SID#394431

ITEM	PART NO.	DESCRIPTION	ORDER/ITM	REL NO.	SHIPMENT WGT	DOCK/DLOC	CTN	U/M	QTY.SHIPPED
1	F00517003 CPT#: WAS 517-4-5 REVISION: 4	1/4 - 28 X 100 DEG CLOSE TOLERANCE PHILLIPS FLAT C'SUNH HEAD - MS CPO#: 0928555 Type Lot # Wire Heat # Serial # Quantity MASTER # SMP112008C 556920 8369908 54400	22330/001		609.60/LBS		18	EA	54400.00000
2	F00517004 CPT#: WAS 517-4-6 REVISION: 4	1/4 - 28 X .844 100 DEG. CLOSE TOLERANCE PHILLIPS FLAT C'SUNH HEAD - MS CPO#: 0928252 Type Lot # Wire Heat # Serial # Quantity MASTER # SMP112008D 556920 8370842 49410	22331/001		595.11/LBS		18	EA	49410.00000
3	F24693002	10-32 X.750 PHILLIPS FLAT HEAD	22348/001		119.40/LBS		5	EA	21940.00000
Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges Per: _____ Shipper: _____ Agent: _____									
Continued Next Page ..									



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturers requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

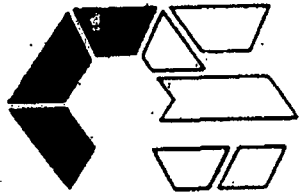
FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
24	25	EA	AN4C20A		314378	CAL SCREW		82507	


Jason Lewis
Vice President of Quality

03/07/14

**CALIFORNIA SCREW PRODUCTS CORP.**

P.O. BOX 228

14957 GWENCHRIS COURT

PARAMOUNT, CALIFORNIA 90723-3423

(562) 633-6626 • FAX (562) 633-2082

PACKING SLIP

Original: 13696

Sold To:

004311
M & M AEROSPACE HARDWARE INC.
P.O. BOX 025263
MIAMI, FL 33102-5263

Ship To:

M & M AEROSPACE HARDWARE INC.
10000 N.W. 15th TERRACE
MIAMI, FL 33172

Customer P.O. No.		Sales Order		Date	Ship Via		Job No.
OE0081		26797		03-14-07	FED EX GROUND/WATKIN		314378
Pos	Item	Ordered	Delivered Qty	Unit	Weight	No. of Cartons	

20	AN4C20A	9535	9535	ea	320	10	

CALIFORNIA SCREW PRODUCTS CORP.

14957 GWENCHRIS COURT

PARAMOUNT, CALIF. 90723-3423

CAGE NUMBER : 8Z507

Airbus UK Approval No. AUK/SA/30144

Job Number : 314378

BAE/AG/30235 / MAA

TEST REPORT

Part Number : AN4C20A
Customer : M & M AEROSPACE HARDWARE INC.
Procurement Spec. : NASM6812 REV. 2
Surface Finish Spec : AMS-QQ-P-35 REV. N/C
Heat Treat Spec : AMS2759/5 REV. D
Mgntc Permeability : N/A

Part Standard : NASM3-20 REV. 1
Cust. Purchase Order Number : OE0081
Thread Size & Form : .250-28 UNF-3A
Thread Spec : MIL-S-7742 REV. D
Sample Size Spec. : NASM6812 REV. 2

Shipped Quantity*: 9535
Mfg Quantity : 25000
Material : 431
Item Description: Bolt
Heat Number : 548173

* Actual piece count is within +/- 2% of the shown lot quantity.

NON-DESTRUCTIVE TESTS / SUBCONTRACTED (SEE CERTIFICATION)

Sample Size : 50 specimens Inspection Results: Accept : 50 Reject : 0 specimens
Magnetic Particle : ASTM E1444-05 Fluorescent Penet. : N/A

METALLURGICAL EXAMINATION RESULTS

Sample Size : 5 specimens Accept : 5 Reject : 0 Lab Mount No. : 33424
GRAIN SIZE : 6 HEAD STRUCTURE : Accept LAPS : Accept MICRO STRUCTURE : Accept
FILLET COLD WORKED : Accept DECARB : Accept SEAMS : Accept CARBURIZED : Accept
GRAIN FLOW HEAD : Accept GRAIN FLOW THREAD : Accept CRACKS : Accept THREAD RUN OUT : Accept

MECHANICAL TESTS RESULTS

ULTIMATE TENSILE STRENGTH (lbs.) - Loc. of Failure: Threads Minimum Req.: 4080
Sample Size : 5 specimens Accept : 5 Reject : 0 Maximum Req.: 0

1.	6250	2.	6330	3.	6300	4.	6290	5.	6220	6.	N/A	7.	N/A	8.	N/A
9.	N/A	10.	N/A	11.	N/A	12.	N/A	13.	N/A	14.	N/A	15.	N/A	16.	N/A
17.	N/A	18.	N/A	19.	N/A	20.	N/A	21.	N/A	22.	N/A	23.	N/A	24.	N/A
25.	N/A	26.	N/A	27.	N/A	28.	N/A	29.	N/A	30.	N/A	31.	N/A	32.	N/A

SHEAR (lbs.) S/D : SINGLE Sample Size : 5 specimens Accept : 5 Reject : 0 Minimum Req.: 3680

1.	4670	2.	4830	3.	4720	4.	4840	5.	4770	6.	N/A	7.	N/A	8.	N/A
9.	N/A	10.	N/A	11.	N/A	12.	N/A	13.	N/A	14.	N/A	15.	N/A	16.	N/A
17.	N/A	18.	N/A	19.	N/A	20.	N/A	21.	N/A	22.	N/A	23.	N/A	24.	N/A
25.	N/A	26.	N/A	27.	N/A	28.	N/A	29.	N/A	30.	N/A	31.	N/A	32.	N/A

HARDNESS TEST Sample Size : 8 Hardness Req. RC : 26-32 Hardness Results : 28-32

STRESS RUPTURE TEST - N/A Load (Lbs.) : 0 Temperature (F) : 0 Periodic test, REF Job No. :
Sample Size : 0 Hours : 0

FATIGUE TEST - N/A Cycles : 0 Min Req. : 0
Sample Size : 0 Low Load (lbs.) : 0 High Load (lbs.) : 0

TORQUE TEST - N/A Sample Size : 0 Load (Lbs/in) : 0

STRESS DURABILITY TEST - N/A Sample Size : 0 LOAD (Lbs.) : 0 Hours: 0

STATEMENT OF CONFORMANCE:

This report relates only to items inspected/tested. Deviations from standard test methods, if any, are noted, and results from subcontracted inspection or testing, if any, are identified. All items were manufactured in the USA under a quality management system, which complies with ISO 9001 and with AS 9100. CALIFORNIA SCREW PRODUCTS CORP, hereby states: That the above product is mercury free; that the above listed lot has been produced, sampled, tested, inspected and marked in accordance with all requirements and that the product complies with all specification and contract requirements; that evidence of which is in the files of our company subject to examination. This report shall not be reproduced except in full, unless authorized in writing by CALIFORNIA SCREW PRODUCTS CORPORATION.

MARIAELENA
TORRES

FINAL INSPECTOR

(Name, Signature, Stamp and Date)

CERTIFICATE OF TESTS
CERT SERIAL# 000545856

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

07/31/06

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 2

CALIFORNIA SCREW PRODUCTS CORP
PO BOX 228
PARAMOUNT, CA 90723

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
54953	LOS008101 L30595	07/31/06	1898.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

548173

PRODUCT DESCRIPTION: TYPE 431 ANNEALED SEAM FREE CF WIRE FOR HEADING CL N2
----- HVY CU/MOLY/SOAP

SPECIFICATION: ASTM-A493-95(2004) (TYPE 431) LIGHTLY DRAFTED
----- HI SHEAR/115 REV J (12/02/93)
AMS 5628/REV F (01/ /02)
MIL-S-18732D " CAP OF" MOD NICKEL NOTICE 1 (03/19/91)

SIZE 0.245000/IN. (6.22 MM) RD WIRE

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.16	0.61	0.45	0.019	0.002	15.83
NI (XRF)	MO (XRF)	CU (XRF)	N (FUS)		
1.60	0.11	0.11	0.05		

CAPABLE OF PASSING BEND TEST.

THE CHEMICAL ANALYSIS OF THIS HEAT HAS BEEN PERFORMED BY THE CARPENTER SPECIALTY ALLOYS CHEMICAL LABORATORY, (CODE NUMBER PRI 100004), WHICH WAS ACCREDITED TO THE ISO/IEC 17025 (EXPIRATION DATE OCTOBER 31, 2006).

DISCS MACROETCHED AND APPROVED

TENSILE AS SHIPPED, KSI(MPA) 118.0(814)

MAX QUENCH HARDNESS, HRC - 50 - 1875 F(1024 C) 30 MN OIL TREAT
MAGNETIC PARTICLE: FREQUENCY = 0 / SEVERITY = 0

*TENSILE AS SHIPPED, KSI(MPA) 116.0(800) 118.0(814) 118.0(814)

*TENSILE'S REFERRED TO CUSTOMER AND ACCEPTED.

KMIK 7533
JOSE CERVANTES
8.1.2006 CSP

CONTINUED ON NEXT PAGE

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000545856



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

07/31/06

CUSTOMER / BESTELLER / CLIENT

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- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 2

CALIFORNIA SCREW PRODUCTS CORP
PO BOX 228
PARAMOUNT, CA 90723

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

3/13/4378

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / MERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
54953	LOS008101 L30595	07/31/06	1898.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

548173

CAPABILITY

1875 F(1024 C), 30 MN OIL TREAT
1175 F(635 C), 03 HR AIR COOL

MICROSTRUCTURE - FERRITE - NONE

GRAIN SIZE PER ASTM E112: 10

RETAINED AUSTENITE - NONE

CAPABILITY

1875 F(1024 C), 01 HR OIL TREAT
-100 F(-73 C), 02 HR
WARM TO ROOM TEMP
550 F(288 C), 02 HR AIR COOL
550 F(288 C), 02 HR AIR COOL

(T)RANSVERSE (L)ONGITUDINAL
YIELD STRENGTH, (0.20 %) KSI(MPA) 156.0(1076)
TENSILE STRENGTH, KSI(MPA) 218.0(1503)
ELONGATION IN 2.00", % 16.0
REDUCTION OF AREA, % 57.0

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.
MATERIAL SUPPLIED COMPLIES WITH THE REQUIREMENTS OF DFARS 252.225.7014

(JUNE 2005) ALT.1 AND SUBSECTION 225.872.1.
CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF SEPTEMBER 2, 2004 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 04-0540 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

HEIDI L. SUNDAY
MET RELEASE/REQUIREMENTS ANALYST
CARPENTER TECHNOLOGY CORPORATION

RMK 7533
JOSE CERVANTES
8-T-2006 CSP

Heidi L. Sunday



10643 S. NORWALK BL.
SANTA FE SPRINGS
CALIFORNIA 90670
562-944-8808
800-622-6624
FAX 562-944-1499

CERTIFICATION

CERTIFICATION NUMBER
469973

CALIFORNIA SCREW PARAMOUNT
14957 GWENCHRIS AVE
PARAMOUNT, CA 90723-3423

CALIFORNIA SCREW PARAMOUNT
14957 GWENCHRIS AVE
PARAMOUNT, CA 90723-3423

CUSTOMER NUMBER 0063100	DATE RECEIVED 10/19/06	CUSTOMER P.O. NUMBER 64300	CUSTOMER SHIPPER
----------------------------	---------------------------	-------------------------------	------------------

QUANTITY 25200	WEIGHT 850	PART NUMBER / DESCRIPTION AN4C20A REV. N/A J/N 314378 P/S NASM3-20 REV. 1 H/T PER P.O.	10 PANS
-------------------	---------------	---	---------

ATERIAL 431 S/S	HARDNESS 27-32 HRC	MAX-CROSS SECTION 250	CASE DEPTH	CORE HARDNESS
--------------------	-----------------------	--------------------------	------------	---------------

PECIFICATIONS AMS 2759/5 D

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	Q-MED & TEMP	DATE
RACK			RACK		.08	Y				10/27
PREHEAT	1400	:30	V9	1400	05:35	06:25	06:55	VAC	RAISE	10/27
AUSTENITIE	1875	2:00	V9	1875	06:55	07:25	09:25	VAC	OIL	10/27
SUBZERO	-100	2:00	CB1	-100	12:50	13:10	15:10	NIT	A/W	10/27
TEMPER	1125	4:00	D14	1125	22:44	23:30	03:30	AIR	A/C	10/27
TEST RESULTS: 36 HRC					LAB#: 373/00367	TEST:1	ACCT:12600	REJT:0		
TEMPER	1125	4:00	D16	1125	07:50	09:30	13:30	AIR	A/C	10/28
LOAD: 02										
RACK			RACK		.08	Y				10/28
PREHEAT	1400	:30	V9	1400	08:00	08:45	09:15	VAC	RAISE	10/30
AUSTENITIE	1875	2:00	V9	1875	09:15	09:50	11:50	VAC	OIL	10/30
SUBZERO	-100	2:00	CB1	-100	13:03	13:20	15:20	NIT	A/W	10/30
TEMPER	1125	4:00	D16	1125	21:05	21:30	01:30	AIR	A/C	10/30
TEST RESULTS: 31-32 HRC					LAB#: 365/00367	TEST:2	ACCT:12600	REJT:0		
TEMPER	1125	4:00	D14	1125	18:16	19:00	23:00	AIR	A/C	10/31

LOAD 01 HARDNESS:29-31 HRC QTY TESTED:8 QTY ACCT:12600 QTY REJT: 0 LOAD
02 HARDNESS:27-29 HRC QTY TESTED:8 QTY ACCT:12600 QTY REJT: 0

SPECTOR
RANDALL THOMAS

DATE
11/02/06

QUALITY MANAGER
KEN NELSON for DON LOWMAN

is Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are
plied, as a result of the thermal processing and/or hardness testing of this Process Certification.
L FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATEST
EVISION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.
4.7.1 REV C 12/10/04
SUBJECT TO CONDITIONS ON REVERSE SIDE

ACTIVE



SOLD TO: CALIFORNIA SCREW PRODUCTS
14957 GWENCHRIS AVE P.O. BOX 228
PARAMOUNT, CA 90723
(562) 633-6626

[illegible]

ASSINATE MIL-STD-753C METHOD 101/AMS-00-P-35 REV N/C/Type I

ther **RUST PROOF**

AGNETIC SPECIFICATIONS ASTM-E-1444-05

Acceptance Criteria NASM6B12 REV 2[illegible]

Reason Rejected

FLUORESCENT PENETRANT SPECIFICATIONS

Acceptance Criteria

[illegible]

Reason Rejected

QC MRG/NDT LEVEL III: DENNIS B. BRANNON

a test certification shall not be reproduced except in full. This certification shall not be used by the customer to im- product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the duct shipped on the above certification were processed, inspected & tested in compliance with all applicable its & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION/TEST REPORT COPY



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

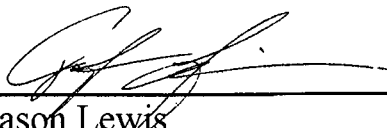
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
39	1500	EA	MS20600AD4W4		87606769	CHERRY AEROSPACE SAN 11815			


Jason Lewis
Vice President of Quality

03/06/14



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
54	10	EA	MS35206-217		81551	CRESCENT MFG.	63020		



Jason Lewis
Vice President of Quality

03/06/14

Nº 81551

CERTIFICATE OF COMPLIANCE TEST REPORT

FORM REV A 11/09

MADE IN THE U.S.A.

CUSTOMER NAME B/E AEROSPACE CONSUMABLES

PART NO. MS35206-217 REV 2

PURCHASE ORDER NO. 0PXV66

INTERNAL ROUTING NO. 33464

QUANTITY ONE HUNDRED FORTY EIGHT THOUSAND FOUR HUNDRED

MATERIAL/SPECIFICATION .092 C1018 TRU SPEC I-W30982

DATE 9/19/2013

PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH APPLICABLE DRAWINGS AND SPECIFICATIONS.

PHYSICAL PROPERTIES

TENSILE STRENGTH HARDNESS SCALE

- | | |
|---------------|----|
| 1) 448.0 LB T | 1) |
| 2) 442.0 LB T | 2) |
| 3) 447.0 LB T | 3) |
| 4) 445.0 LB T | 4) |
| 5) 428.0 LB T | 5) |
| 6) 446.0 LB T | 6) |
| 7) 445.0 LB T | 7) |
| 8) 450.0 LB T | 8) |

CONFORMS TO THE PROCUREMENT SPECIFICATIONS OF:

FF-S-92B

OTHER MECHANICAL TEST DATA

- ☐ MEET MAGNETIC PERMEABILITY REQUIREMENTS OF FF-S-92B, MIL-I-17214B, AND ASTM A342/A 342M TEST METHOD 3.

PARTS ARE FREE FROM MERCURY AND ASBESTOS CONTAMINATION.
VISUAL AND DIMENSIONAL INSPECTION SATISFACTORY

FINISH

CAD TYPE 2 CLASS 3 PER AMS QQ-P-416 REV C

OTHER TESTING:

INSPECTED TO: ANSI/ASQ Z1.4 LEVEL 2

ADDITIONALLY, AN ANSI/ASQC Z 1.4 SAMPLE OF THE FINISHED FASTENERS WERE TESTED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. SAMPLE PARTS AND THE TEST DATA ARE IN OUR RECORDS RETENTION AREA AS OBJECTIVE EVIDENCE AND WILL BE HELD AS REQUIRED.

Signature

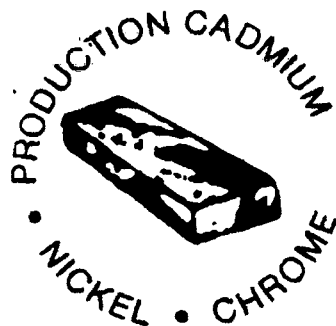
TRACEY NIKSA, QC TECH

Cage Code #63020

CRESCENT MANUFACTURING OPERATING, CO.



700 George Washington Turnpike, Burlington, CT 06013, U.S.A.
Telephone: (860) 673-2591 Fax: (860) 673-5973



New Method Plating Co., Inc.

QUALITY
MANAGEMENT
SYSTEM
ISO 9001:2000
AS9100 REV. B
CERTIFIED

Established 1931



43 Hammond St.
Worcester, MA 01610
Phone 508.754.2671
Fax 508.754.1981
www.newmethodplating.com

CERTIFICATE OF COMPLIANCE

COMPANY CRESCENT MFG. CO.

DATE 9/10/13

PO#

QUANTITY

33464

170,000

JOB # 4-40 x .500 ph pan MS35206-217

CADMIUM PLATED IN ACCORDANCE WITH AMS QQ-P-416C

Class III Type II (Clear___YellowXBlack___)

Hardness: NA HRC

☒ NO BAKE

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 8 hours.

☐ Before plating, bake at 275+/-25F for 5 hours. After plating, bake at 275+/-25F for 23 hours.

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 23 hours.

Thickness Test Results

Accept ☒ Reject ☐ Min.: Spec. .0002 Read .00022 Avg. .00024

Adhesion Test Results

Accept ☒ Reject ☐

Inspected by: 

Certification

This lot has been processed, sampled, tested, and inspected in accordance with the contract and specification requirements listed above, and the plating and conversion coating complies with those contract and specification requirements. Process control data is on file and is available upon request. We certify that these parts have been processed in a mercury free environment.

Signed: 

Christopher J. Capalbo

Title: Quality Manager

Date: SEP 11 2013

CRESCENT MFG
T.R. NO. 8557



**Johnstown
Wire
Technologies**

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5880
Fax: 814-532-5884

WORK ORDER
469197

TEST REPORT

LOT NUMBER

I-W30982

SALES ORDER / RLS
155582 / 1

SOLD TO

Tru-Spec Metals, Inc.
21 Commerce Drive
North Branford, CT 06471
USA
Attn: QA Dept



Revised Product
Certification

CUSTOMER P.O. P13725	CUSTOMER PART C1018082IPPL	QUANTITY 4,095 LBS	COILS 3	LADING NO 00113857	SHIPMENT DATE 11/08/2012
SPECIFICATION Truspec-5808 AIR 4127 1018 Aluminum Killed Fine Grain Cold Heading Quality Spheroidize Annealed in Process PHOS & Lube Coated Size: .092 +STD -STD					
CERTIFICATION REQUIREMENTS					
Chemical					
C .19	Mn .76	P .008	S .001	Si .08	Al .036
Mechanical					
TEST Tensile Str	UNITS Lbs/SqIn	HIGH 70000	LOW 70000	AVERAGE 70000	
Rod / Melt Source					
Country of Origin Canada					
End of Certification					

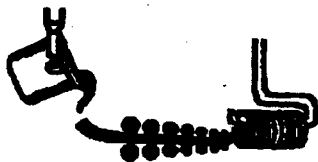
I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

D. L. Deetscreek

D. L. Deetscreek
Director of Quality Assurance

CRESCENT MFG
T.R. NO. 81551

Date Printed 11/08/2012



10459 0094 **JOHNSTOWN WIRE TECHNOLOGIES**
124 LAUREL AVENUE
JOHNSTOWN, PA.
15906

MILL TEST CERTIFICATE

IVACO ROLLING MILLS LP

P.O. BOX 322, L'ORIGNAL, ONTARIO, CANADA K2B 1K3
TEL: (813) 875-4671 FAX: (813) 875-6888

This report contains analysis data that were produced under subcontract by laboratory Pto Tinto - For at Tintore, A2LA certificate number 0429-01.

NVLAP only covers the chemistry presented within this certificate. All other data is not covered by the NVLAP accreditation.



NVLAP

Lab Code 200143-0

ATTENTION : Ed Zapala

FAX : (814) 532-5884

Date Rolled 11-Oct-2012

Date Chemical Analysis Performed 16-Sep-2012

P.O. Number													Order Number			Heat Number			Customer Spec.			Spec Rev. No.			Customer Part No.			Billet Order			Grade			Diameter			
83035													10140524			W30982			AXA18CF			8/27/01			AXA18CF			337660			1018MDAK GHQ			7.00 mm			
Heat Analysis																																					
Spec. Min		C		Mn		P		S		Si		Cu		Ni		Cr		Mo		Sn		Al		N													
Actual		.18		.70																		.020															
Spec. Max		.19		.78		.008		.001		.08		.05		.08		.07		.005		.002		.038		.0041													
		.20		.90		.020		.020		.10		.10		.10		.10		.040		.020		.060		.0080													
This is to certify that heat number W30982 is in conformance with the required specifications.																																					

This is to certify that heat number W30982 is in conformance with the required specifications.

Heat analysis obtained by test methods ASTM E415 and ASTM E1019.
Minimum and maximum refer to the required customer specification.

This is to certify that the material is in conformance with the required specifications.
Radioactive emissions are at background levels.

The wire rod was produced from Continuous Cast billets.

The product has not come in contact with mercury or any of its compounds during processing at LRAM.

This steel was produced using a fine grain steelmaking practice (8-11).

This wire rod was produced in conformance with SAE AM 4127

APPROVED BY :

Supervisor, Chemistry Laboratory and Billet Inspection

ISSUED BY QUALITY ASSURANCE :

Date: 15 Oct 2012

Specification Clerk

This Certificate shall not be reproduced except in full, without the written approval of Ivaco Rolling Mills LP, a Heico Company. This certificate is not to be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

CRESCENT MFG
T.R. NO. 81551

TRU-SPEC METALS, INC.



NORTH BRANFORD, CT

1-888-484-5154

SHIP TO: Crescent Mfg. Co.
700 George Washington Tpk.
Burlington, CT 06013

[illegible]

CRESCENT MFG
T.R. NO. 81551

Tru-Spec Metals, Inc.


21 Commerce Drive ~ North Branford, CT 06471 ~ 888-484-5151 ~ Fax 888-484-5154

5/15/2013

We certify that the following material was supplied by Tru-Spec Metals, Inc. and shipped to
Crescent Manufacturing Company:

<u>Dia.</u>	<u>Grade</u>	<u>Temper</u>	<u>Quantity</u>	<u>Heat #</u>	<u>PO#</u>	<u>Producer</u>
.092"	C1018	SAIP	1,133#	IW30982	K12-298	Johnstown
.176"	C1018	SAFS	1,896#	DB24043	K13-8	Johnstown
.176"	C1018	SAFS	1,421#	IW31499	K13-8	Johnstown

Sincerely,



Linda MacLean
Tru-Spec Metals, Inc.

CRESCENT MFG
T.R. NO. 8551



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
45	50	EA	MS21069L3		51414	PAOLO ASTORI	A3856		


Jason Lewis
Vice President of Quality

03/06/14

CRESCENT MANUFACTURING

P.O. BOX 1350
BURLINGTON, CT 06013-1350
(860) 673-2591 FAX (860) 673-5973

Picking Ticket	33464
Document Date	7/1/2013
Page	1
Date Time Printed	9/18/2013 2:11:44 PM

Bill To:

B/E AEROSPACE CONSUMABLES MGMNT
PO BOX 025263
MIAMI FL 33102-5263

UNITED STATES

Ship To:

B/E AEROSPACE CONSUMABLES MGMNT
9835 NW 14TH ST
MIAMI FL 33172

UNITED STATES

NO OVER 150#+ FX FRT 018757
FED X SAVER 033101490

P.N.

Customer ID	Purchase Order No.	Shipping Method	UPS Account No.	Date	
11610	0PXV66	TRUCK	UPS 363159	09/19/13	
Item Number	Description	Location	Stk Amt	Pick Qty	Qty Picked
MS35206-217	4-40 X .500 PH PAN STEEL CAD TYPE 2 CL3 REV 2 4X33m 1X16.4m			150.0	148.4m 5Boxes Call Complete
CT	CHEM & PHYS TEST REPORT			1.0	
SHIP 11/18/2013 SURE NOT BEFORE RELEASE# 3BRV0PXV66.					

VENDOR transpec

DIA & TYPE .092-1018

HEAT # TW 30982

CRESCENT MFG

T.R. NO 8551

APW: 0.0014842 Lbs

MADE IN THE USA

**PAOLO ASTORI SPA**

Via Mirabella, 9 - Maggiate Superiore
28013 Gattico (NO) - ITALY
Tel. (+39) 0322 838847
Fax (+39) 0322 880198
Web: www.paoloastori.com

**DOCUMENTO DI TRASPORTO (D.d.T.)****N° 6215****Data** 21/06/2013**Pag.** 1 / 1

9449

B/E AEROSPACE INC.CONSUMABLES MANAG
9835 NW 14TH ST.
MIAMI - FL
USA

Destinazione (Ship To):

370

B/E AEROSPACE INC.CONSUMABLES MANAG
9835 NW 14TH ST.

Cod.Cliente

33172 MIAMI - FL US

Pos.	Descrizione merce Part Number	Rif.Ordine (PO Number)	Data Ordine (PO Date)	Quantità (Quantity)	U.M.	N° Lotto (Batch #)	Peso (Weight)	TR	QCIR	FAI
1	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	4000	N	51414	-		X	
2	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
3	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
4	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
5	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
6	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
7	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
8	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
9	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
10	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	
11	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	OKJE83	17/08/2012	12000	N	51414	-		X	

- SUPPLIES RELEASED IN ACCORDANCE WITH REQUIREM. OF BAE/AG/SC1 PART 3- APPROVAL # BAE/AG/30631/MAA AND WITH AIRBUS SAS APPROVAL # 204788 Se sotto
150 lbs sped con fedex ground, account #0331-0149-0,mark:collect;se sopra 150 lbs sped con fedex economy,account #018757

Aspetto esteriore merce	Comprende DdT n°	Segue su DdT n° 6116
Tramite spedizione VETTORE	Modalità di consegna PORTO ASSEGNATO	Firma conducente
Causale trasporto VENDITA PRODUZIONE	Data inizio trasporto	Firma destinatario
Primo vettore FEDERAL EXPRESS EUROPE INC. # 327657348	Data ritiro merce	Firma primo vettore
Secondo vettore	Data ritiro merce	Firma secondo vettore

**PAOLO ASTORI SPA**

Via Mirabella, 9 - Maggiate Superiore
28013 Gattico (NO) - ITALY
Tel. (+39) 0322 838847
Fax (+39) 0322 880198
Web: www.paoloastori.com

**CERTIFICATE OF CONFORMANCE****N° 6215****Date 21/06/2013**

This is to certify that goods listed below have been inspected in our plant and are up to your orders and to the specifications of the drawings mentioned therein.

Country of origin is ITALY.

To:

**B/E AEROSPACE INC.CONSUMABLES MANAG
9835 NW 14TH ST.
MIAMI - FL
USA**

Pos	Part Number	Purchase Order	Order Date	Quantity	U.M.	Batch	Cure Date Expiry Date
1	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	4000	N	51414	
2	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
3	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
4	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
5	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
6	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
7	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
8	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
9	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
10	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	
11	MS21069L3 RELEASE W0170KJE83(Rev. REV1)	0KJE83	17/08/2012	12000	N	51414	

- SUPPLIES RELEASED IN ACCORDANCE WITH REQUIREM. OF BAE/AG/SC1 PART 3/A APPROVAL # BAE/AG/30631/MAA AND WITH AIRBUS SAS APPROVAL # 204788 Se sotto 150 lbs sped con fedex ground, account #0331-0149-0, mark: collect; se sopra 150 lbs sped con fedex economy, account #018757

Airbus approval # 204788 - BAE Approval # BAE/AG/30631/MAA - Complies with DFARS 252.225-7014. - Agusta-Westland Q500 approval # A/0047

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which traceability has been maintained by the buyer. The seller manufacturing lot identification number and return authorization (RMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than ninety (90) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or rework of such goods, at seller option, and in no case is to exceed the invoice value of such goods. Under no circumstance will seller be liable for damages or cost incurred by buyer or subsequent user beyond the invoice value of the parts in subject.

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= AS/EN/ISO 9100 =

QUALITY CONFORMANCE INSPECTION REPORT

Sede legale: via Molinella, 9 - MAGGIATE Sup. - 28013 GATTICO (NO) ITALY-TEL: 0322-838647 FAX: 0322-838198 www.gudmund.com

STATEMENT OF CONFORMITY

THIS IS TO CERTIFY THAT PARTS HAVE BEEN PRODUCED, CONTROLLED AND ACCEPTED
ACCORDING TO THE REQUIREMENTS OF THE APPLICABLE SPECIFICATION CALLED BY THE PURCHASE
ORDER AND/OR THE APPLICABLE STANDARD DRAWING.
MATERIAL, HEAT AND SURFACE TREATMENTS AND MANUFACTURING PROCESSES ARE THE SAME AS
THOSE USED FOR THE QUALIFICATION APPROVAL.
SAMPLES SUBJECT OF ALL TESTS WERE BEEN SELECTED AT RANDOM FROM THE PRODUCTION BATCH
COVERED BY THIS DOCUMENT. COUNTRY OF ORIGIN ITALY.
THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF
PAOLO ASTORI SPA.

Matteo Holmberg
Signature
Quality Representative

CUSTOMER	see attached COC
P.O.	see attached COC
PART NO.	MS21059.3 per NASM21059 REV1 / NAS657A3 REV10
ASTORI CODE	10AD25A302M11
DESCRIPTION	NUT SELF-LOCKING PLATE TWO LUG
PROCUREMENT SPEC.	NASM2002
BATCH NO.	51414
BATCH QUANTITY	157.000
QUANTITY DELIVERED	see attached COC

Description of component	Raw material specification	Raw material Batch no.	Heat n°	Finish treatment performed	Raw material in accordance with
NUT	SAR1042	-2705	6080	hardening & tempering	ASTM A29
OTHER					
OTHER					
OTHER					

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which responsibility has been established by the buyer. The seller's manufacturing lot identification number and source authentication (DMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than thirty (30) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or refund of such goods, at seller's option, and in no case is to exceed the invoice value of such goods. Under no circumstance will seller be liable for damages or cost incurred by buyer or subcontractor beyond the invoice value of the parts in subject.

Date: 12/08/13 Batch N° 51414 *W* page 1 of 5

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= AS/EN/ISO 9100 =

QUALITY CONFORMANCE INSPECTION REPORT

Sede legale: via Molinella, 9 - MAGGIATE Sup. - 28013 GATTICO (NO) ITALY-TEL: 0322-838647 FAX: 0322-838198 www.gudmund.com

SUMMARIZED TEST RESULTS

(all tolerances are expressed in metric and imperial units - test results are recorded as read on the MTE)

Characteristic	Inspection or test to be Performed	Applicable or not	Sample Inspected	Inspection Media	Test Result	Note
Examination of product:						
Design	Verify the design of the nut	A	ALL	VISUAL	OK	
Self-locking device (Major A)	Examination	A	80	VISUAL	OK	see table 1
Thread fit (Major B)	Go-no go gauge - test bolt application	A	32	BOLT GO-GAGE	OK	see table 2
Bearing surface condition and perpendicularity (Major B)	Check surface roughness and perpendicularity error	A	32	OPTICAL COMPARATOR	OK	see table 3
Surface finish, plating or surface treatment (Major B)	Verify the compliance of the surface treatment and condition	A	32	VISUAL	OK	see table 4
Rivet hole location and alignment (Major B)	Measure the position and the distance	A	32	DIGITAL CALIPER	OK	see table 5
Height of nut (Major B)	Measure the dimension	A	32	DIGITAL CALIPER	OK	see table 6
Loose or loading bars (Major B)	Verify the presence of any kind of bars	A	13	VISUAL	OK	see table 7
All other dimensional characteristics not covered above (Major B)	Measure all dimensions with reference on the applicable standard	A	13	DIGITAL CALIPER	OK	see table 8 see attachment
Axial Tensile strength (Table DQ)	Verify if the nuts withstand the minimum axial strength	A	27	LOAD MACHINE	OK	see table 9
Locking torque	See below					
Max locking torque (Table DQ)	Measure and record the torque value for 1st, 7th, 15th of each nut tested	A	27	LOAD MACHINE	OK	see table 10
Min breakaway torque (Table DQ)	Measure and record the torque value for 1st, 7th, 15th of each nut tested	A	27	TORQUE METER	OK	see table 11
Torque out (Table DQ)	Torque out value must be not less than the requested value (astribute)	N/A	-	TORQUE METER	OK	see table 12
Push out (Table DQ)	Push out value must be not less than the requested value (astribute)	A	27	LOAD MACHINE	OK	see table 13
Distortion (Major B)	No cracks at all - Dimples of discontinuities not more than values	A	32	VISUAL	OK	see table 14
23-hour stress embrittlement (10 pcs)	Evidence of complete absence of stress embrittlement (astribute)	A	10	VISUAL	OK	see table 15
Magnetic permeability (Table DQ)	One nut must have less a magnetic permeability less than 2.0 is air for a field strength of 10-200	N/A	-	LOW MU INDICATOR	OK	see table 16
Inspection of packaging (AS boxes)	Verify the correctness of packaging	A	ALL	VISUAL	OK	see table 17

Date: 12/08/13 Batch N° 51414 *W* page 2 of 5

QUALITY CONFORMANCE INSPECTION REPORT

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV - AS/EN/ISO 9100 -

Sede legale: via Mabile, 9 - MAGGIATE Sop. - 20113 GATTECO (NO) ITALY - TEL: 0322-83847 FAX: 0322-832138 www.prolonnet.com

Table 1 - Self locking device - examination (control by attribute; ok/not ok) III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Table 2 - Thread fit (control by attribute; go-no go gauge ok/not ok - both applications) III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Table 3 - Bearing surface max. squareness deviation admitted value admitted 0.13 mm (0.0051 in) max. measured 0.08 mm (0.0031 in)
Surface roughness max. 3.2 (125 micro in) max. measured 1.6 (63 micro in) III

0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.05	0.04	0.04	0.04	0.04	0.05	0.05
0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.04	0.05	0.04	0.05	0.05	0.05
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6

Table 4 - Surface finish/plating or surface treatment (control by attribute; ok/not ok)

Actual Building CADMIUM PLATED IN ACC. WITH AMS-QQ-P-416 TYPE II CLASS 2
LUBRICATED IN ACC. WITH AMS272 III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Table 5 - Sheet hole location and alignment.

Dimension requested 12.70 ±0.05 mm (0.500 ±0.002 in) max. range measured 12.71 mm (0.500 in) III

12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.71	12.70	12.70
12.70	12.70	12.70	12.70	12.71	12.70	12.70	12.70	12.70	12.70	12.70	12.71	12.70	12.70	12.70	12.70

Table 6 - Height of nut Dimension requested 5.35 mm max (0.211 in max) max. range measured 5.51 mm (0.217 in) III

5.41	5.41	5.40	5.41	5.40	5.40	5.41	5.42	5.47	5.41	5.38	5.41	5.38	5.40	5.51	5.39
5.41	5.39	5.40	5.41	5.40	5.38	5.39	5.41	5.45	5.40	5.39	5.42	5.41	5.42	5.41	5.43

Date: 12/06/13 Batch N° 51414 III page 3 of 5

QUALITY CONFORMANCE INSPECTION REPORT

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV - AS/EN/ISO 9100 -

Sede legale: via Mabile, 9 - MAGGIATE Sop. - 20113 GATTECO (NO) ITALY - TEL: 0322-83847 FAX: 0322-832138 www.prolonnet.com

Table 7 - Loose or hanging burrs (control by attribute by means visual examination ok/not ok) III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Table 8 - All other dimensional characteristics not covered above (reference on the tolerances of the applicable standard dwg) III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Table 9 - Axial Tensile strength - Minimum load requested 10846 N (2453 lb) max. measured 12350 N (2804 lb) III

13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350
13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350	13350

Table 10 - Min locking torque - Min. installation torque admitted 2.03 Nm (17.57 in-lb) min. measured 1.96 Nm (17.35 in-lb) III

1.83	1.87	1.92	1.77	1.90	1.96	1.85	1.71	1.78	1.75	1.92	1.90	1.79	1.81	1.82	1.88
1.56	1.60	1.50	1.58	1.60	1.61	1.58	1.65	1.59	1.53	1.54	1.57	1.58	1.53	1.57	1.61
1.24	1.24	1.23	1.28	1.28	1.24	1.25	1.28	1.30	1.24	1.25	1.24	1.21	1.28	1.27	1.29
1.90	1.79	1.83	1.85	1.82	1.79	1.80	1.85	1.90	1.81	1.88					
1.58	1.61	1.57	1.53	1.52	1.57	1.52	1.58	1.53	1.50	1.52					
1.24	1.23	1.28	1.27	1.26	1.23	1.30	1.35	1.25	1.28	1.29					

Table 11 - Min breakaway torque - Min. breakaway torque requested 0.23 Nm (2.04 in-lb) min. measured 1.00 Nm (8.85 in-lb) III

1.72	1.78	1.75	1.79	1.81	1.73	1.78	1.82	1.70	1.83	1.81	1.70	1.69	1.68	1.71	1.75
1.38	1.40	1.44	1.45	1.42	1.49	1.43	1.42	1.48	1.42	1.43	1.48	1.47	1.42	1.49	1.48
1.00	1.02	1.03	1.08	1.08	1.07	1.10	1.11	1.08	1.07	1.03	1.06	1.05	1.07	1.00	1.09.00
1.75	1.88	1.72	1.75	1.88	1.70	1.72	1.71	1.83	1.82	1.77					
1.45	1.47	1.51	1.42	1.46	1.43	1.48	1.42	1.48	1.47	1.42					
1.08	1.09	1.12	1.09	1.08	1.03	1.05	1.07	1.10	1.05	1.08					

Table 12 - Torque test - Minimum requested value (control by attribute ok/not ok) N/A

Table 13 - Push out - Minimum requested value 445 N (100 lb) (control by attribute ok/not ok) 449 N (101 lb) III

OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Date: 12/06/13 Batch N° 51414 III page 4 of 5

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= AS/EN/ISO 9100 =

Table 14.—Discards of 150 crabs or less—Discards with depth more than 0.15 mm (control by size; and other etc.)

[illegible]

Table 15 - 23-hour serum undecanoic (corrected by surface : about 40)

[illegible]

Table 18- Magnetic permeability - (corrected by subtracting : silicon at 90A

Table 1.7. Impediments of packaging - (control of beach package sale of the subject: shown as with respect to the order requirements)

[illegible]

SALES LIVES TRAILER

TABLE 1 FOR MAJOR A CRYSTALLINITY

INFLATION RATES	SAMPLE SIZE	AM	RM
<0.000	50	0	0
0.000-0.120,000	60	0	0
0.12000-0.000,000	60	0	0

TOOL FOR KNOWLEDGE CHARACTERISTICS

WELL-LOG SIZES	WELL-LOG SIZES	AV	RT
<0.0005	20	0	1
0.0005-0.0009	22	0	1
0.0009-0.0013	22	0	1

TABLES FOR HUMAN CHARACTERISTICS

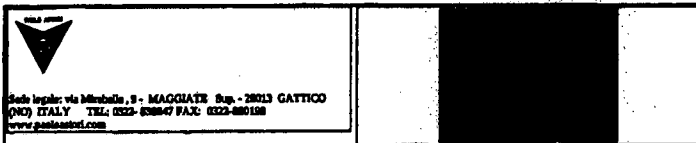
RESEARCHER	RESEARCHER'S SEX	AGE	AGE
CHEN	1	0	1
CHEN & LIAO	1	0	1
CHEN & CHEN	1	0	1

TABLE 1

MATCH SIZE	SAFETY SIZE	AM	EM
<10,000	10	0	1
10,000-1,000,000	15	0	1
>1,000,000	22	0	1

IV

Page 5 of 5



MS21069L3

Q.C.I.R

SEE TABLE 8

BATCH NO.	DATE	VALUE	DIMENSION REQUESTED				DIMENSION MEASURED								SIGNATURE
51414	12/6/13	A	18.39 mm MAX				18.00	17.98	17.94	17.95	17.95	17.98	17.99	TESTED WITH PLUG GAGE	
							17.98	17.99	17.97	18.00	17.98	17.99			
		B	7.57 - 8.33 mm				8.25	8.25	8.25	8.25	8.25	8.25	8.25		
							8.24	8.25	8.25	8.24	8.25	8.25			
		K	2.49 - 2.62 mm				2.61	2.62	2.60	2.61	2.60	2.60	2.61		
							2.61	2.60	2.60	2.61	2.60	2.61			
		H	6.35 mm MAX				5.41	5.41	5.40	5.41	5.40	5.40	5.41		
							5.42	5.47	5.41	5.38	5.41	5.38			
		J	12.70 +/- 0.05 mm				12.70	12.70	12.70	12.70	12.70	12.70	12.70		
							12.70	12.70	12.70	12.70	12.70	12.70			
		V	1.19 mm MAX				0.90	0.94	0.91	0.94	0.88	0.90	0.88		
							0.88	0.91	0.90	0.91	0.94	0.94			
		HR	Hardness HRC 48 max				40	43							
		FLOATING	LO/LA	NA	AXIAL	NA								LO = LONGITUDINALLY	
														LA = Laterally	

LO = LONGITUDINALLY
LA = Laterally



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

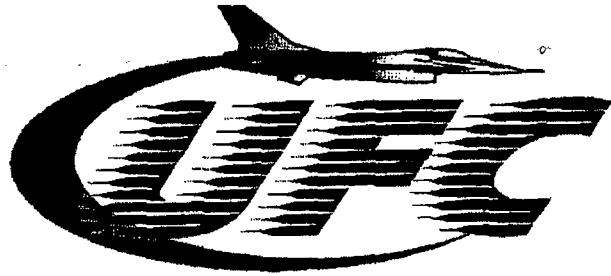
FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
51	200	EA	MS27039-1-16		36655	MAC FASTENERS		ORFT4	


Jason Lewis
Vice President of Quality

03/06/14



25 DREXEL DR., BAYSHORE, NY 11706
ISO9001 / AS9100 REGISTERED QUALITY SYSTEM
QUALITY CONTROL RECEIVING INSPECTION REPORT

**PROGRAM KIT COMPONENT OR CHEMICALS OR STANDARD HARDWARE
FOR STAND ALONE SALES ORDERS. PART IDENTIFICATION LABEL FOR
SCANNING.**



CERT CNY08063000008



ITEM MS27039-1-16



LOT 36655



POH PUR00J0T

BRANCH DS

Vendor. MAC FASTENERS

Qty.... 105,643

Manf... MAC FASTENERS

Rev. 2

Part #..... MS27039-1-16
Lot ID..... 36655
Manufacturer.. MAC FASTENERS
Qty this Lot.. 000105643
Doc Lev..... MTR
Rev..... 2
Sample Size... 000000008
Inspector..... TFR
Cert Date..... 06/30



CUSTOMER
CODE:

DS

PROCESSED BY:

TFR

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List**Bill** UFC Aerospace Corp.

To: 25 Drexel Drive
PO Box 250
Bay Shore, NY 11706
United States

Ship UFC Aerospace Corp.

To: 25 Drexel Drive
PO Box 250
Bay Shore, NY 11706
United States

Shipment No: 37102
Shipment Date: 06/16/08
Ship Via: YELLOW
Order Number: 31614
Order Date: 06/06/06

Customer Code: UFC
Phone: (561) 637-1737
PO Number: PUR00JOT
Terms: Net 30 Days

JOB NO. 36655

<u>Item</u>	<u>Quantity</u>					<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>					
1	100,000	120,000	0	0	M	MS27039-1-16 Screw machine pan head structural cross recessed	1	36655	

JUN 26 2008

14,357 P
SHORT



MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER UFC AEROSPACE CORP	PO NUMBER PUROOJOT	MFG QUANTITY 120,000	DATE 08/16/08
PART NUMBER MS27039-1-16	REV 2	LOT NO 36655	PROCUREMENT SPEC NASM7839

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 8740				MIL-S-6049/AMS8322				525060			WIRETECH		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.41	.24	.93	.008	.01	.16	.43	.43	.21					
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
3,230	3,210
3,240	3,220
3,200	3,250
3,220	3,220
3,210	3,230
3,210	
3,240	
3,230	
MIN. REQ.	2500

DOUBLE SHEAR STRENGTH POUNDS / PSI	
4,960	4,980
4,980	4,960
4,980	5,000
5,000	4,980
4,960	5,000
4,980	
4,980	
4,960	
MIN. REQ.	4250

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	13
ACTUAL RESULTS	
27-29 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASTM B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.



[Signature]
 Quality Assurance Representative

AS9100, ISO9001 REGISTERED
PJR #C2005-02853

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: UFC AEROSPACE CORP

DATE: 06/16/08

PO NUMBER: PUROOJOT

PART NUMBER: MS27039-1-16

REVISION: 2

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225-7014, ALTERNATE 1 COMPLIANT

LOT NUMBER: 36655

MANUFACTURED QUANTITY: 120,000

MILL HEAT NUMBER: 525060

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in conformance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE



MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: UFC AEROSPACE CORP

DATE: 08/16/08

PO NUMBER: PUROOJOT

MANUFACTURED QUANTITY: 120,000

LOT NUMBER: 36655

MATERIAL: TYPE 8740

PART NUMBER: MS27039-1-16

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 13

HARDNESS: 27-29 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.


QUALITY ASSURANCE REPRESENTATIVE





WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

Mac Fasteners
1110 Enterprise Street
Ottawa, KS 66067
USA

WORK ORDER
059014

CERTIFICATION

HEAT NO.
525060
SALES ORDER / RLS
824303 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CUSTOMER P.O. 27496	CUSTOMER PART 8740-1865	QUANTITY 21,509 Lbs	CARRIERS 13	LADING NO 00071424	SHIPMENT DATE 04/29/2008			
SPECIFICATION M048740-101870A A-8740, AQ, SKFG, CHQ WIRE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.1865/0.1875 Specifications: AMS2301H, AMS6322N, MIL-S-6049A, AMEND. 1, AMS-S-6049-A								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C .41	Si .24	Mn .93	P .008	S .01	Cu .16	Ni .43	Cr .43	Mo .21
Physical Properties								
Grain Size Jominy 1 Jominy 2 Jominy 3 Inclusions Macro Cleanliness Mill Source 6 JS=54 J8=46 J10=40 S2-R1-C2 GOOD F&S=0 Charter								
Country of Origin USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	KSI	89.4						
Yield Strength	KSI	76.0						
% Elongation	%	21.5						
% Reduction of Area	%	74.7						
Rockwell Hardness B Scale	HRB (s)	90						
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, Inclusion rating per ASTM E 45, decarburization performed as per IFI 140.</p> <p>The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontracted laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>"LATEST REVISIONS OF ASTM"</p>								
Material is free of mercury, radium, or alpha contamination.								



Handwritten signature





CHARTER STEEL

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

A Division of
Charter Manufacturing Company, Inc.

1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA 90040-
Attn: Janice Duran

Cust. P.O.	6180
Cust Part#	8740C1A080-C-R
Charter Sales Order	280829
Heat #	525060
Ship Lot #	543265
Grade#	8740 R SK FG AQ
Process	SA
Finish Size	1/4

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies those requirements.

Test Results of Heat Lot# 525060

Lab Code: 7388

OUTS. MELT SOURCE HEAT NUM. = N/R

Chemistry	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
Wt%	0.41	0.93	0.008	0.010	0.240	0.43	0.43	0.21	0.16	0.007	0.001

AL	N	B	TI	NB
0.026	0.0080	0.0001	0.001	0.001

Jominy (HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	59	67	57	55	54	51	48	48	43	40	39	37
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	36	35	35	35	34	33	32	31	31	32	31	31

JOMINY SAMPLE TYPE ENGLISH = B JOMINY LAB = 0358-01

CHEM. DEVIATION EXT.-GREEN = N/R

MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1

AMS 2301 FRQ AVE = 0.00 AMS 2301 FRQ IND = 0.00

AMS 2301 SEV AVE = 0.00 AMS 2301 SEV IND = 0.00

Test Results of Rolling Lot # 387077

MAX ALLOWABLE DEFECT = 0.0000
QC DEVIATION EXT.-GREEN = N/R

	# of Tests	Test Results of Processing Lot # 543265	Mean Value	TENSILE LAB = 0358-02
TENSILE (KSI)	2	Min Value 84.4 Max Value 84.8	84.6	RA LAB = 0358-02
REDUCTION OF AREA (%)	2	69	70	RB LAB = 0358-02
ROCKWELL B (HRBW)	2	85	86	RC LAB = N/R
ROCKWELL C (HRC)	0	0	0	

NUM DECARB = 3 FREE FERRITE DECARB = 0.000 FREE FERR & PARTIAL DECARB = 0.003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 3 SPHERODIZATION (%) = 83.3
QC DEVIATION EXT.-PROCESSED = N/R

Specifications:

Manufactured per Charter Steel Quality Manual Rev 8, 12-05-07
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3010 Revision = M Dated = 12-MAR-2003

Additional Comments:

MEETS REQUIREMENTS OF SPECIFICATIONS
AMS69322N/AMS2301J/MIL-S-6049A

Charter Steel
Saukville, WI, USA



Fax number: (323) 728-8360

Rem: Load 1, Mail 0

Testing Laboratory

Janice Bernard
Manager of Quality Assurance
03/10/2008



DE TRAY

Plating Works

Specialized Electro-Plating and Polishing
Nickel *Passivate*
Copper *Bright Dip*
Decorative Chrome *Strip Copper*
Satin Chrome *Descale*
Zinc
Cadmium

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

June 12, 2008

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been stress relieved for 4 hours at 375+/-25 before cleaning cadmium plated per QQ-P-416/AMS-QQ-P-416/NAS4160, Type II, Class 2. Please reference our Invoice #127467 dated 06/12/08 for:

Lot#-36655

P.N.-MS27039-1-16

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



Please Visit our Web Site : DeTrayPlating.com



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
25	100	EA	AN507-1032R15		76868	CRESCENT MFG.	63020		


Jason Lewis
Vice President of Quality

03/06/14

CRESCENT MANUFACTURING

P.O. BOX 1350
BURLINGTON, CT 06013-1350
(860) 673-2591 FAX (860) 673-5973

Picking Ticket	28409
Document Date	5/31/2012
Page	1
Date Time Printed	11/9/2012 10:15:49 AM

Bill To:

B/E AEROSPACE CONSUMABLES MGMNT
PO BOX 025263
MIAMI FL 33102-5263

UNITED STATES

Ship To:

B/E AEROSPACE CONSUMABLES MGMNT
9835 NW 14TH ST
MIAMI FL 33172

UNITED STATES

NO OVER 150#+ FX NAT 018757
FED X SAVER 033101490

Customer ID	Purchase Order No.	Shipping Method	UPS Account No.	Date	
11610	OHZE84	TRUCK	UPS 363159	11/09/12	
Item Number	Description	Location	Stk Amt	Pick Qty	Qty Picked
AN507-1032R15	10-32 X 15/16 PH FLAT 100 STEEL CAD TY1 CL3 1X7.5m 1X2.5m			10.0	10m 2 Boxes
CT	CHEM & PHYS TEST REPORT			1.0	

VENDOR TRV-Spec

DIA & TYPE .176-1018

HEAT # W28978

CRESCENT MFG

T.R. NO 76868

APW: 0.0064737 Lbs

MADE IN THE USA

Nº 76868

CERTIFICATE OF COMPLIANCE TEST REPORT

FORM REV A 11/09

MADE IN THE U.S.A.

CUSTOMER NAME B/E AEROSPACE CONSUMABLES

PURCHASE ORDER NO. OHZE84

PART NO. AN507-1032R15 REV 6

INTERNAL ROUTING NO. 28409

QUANTITY TEN THOUSAND

MATERIAL/SPECIFICATION .176 C1018 TRU SPEC W28978

DATE 11/12/2012

PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH APPLICABLE DRAWINGS AND SPECIFICATIONS.

CONFORMS TO THE PROCUREMENT SPECIFICATIONS OF:

PHYSICAL PROPERTIES
TENSILE STRENGTH HARDNESS SCALE

FF-S-92B

- 1) 1453.0 LB T
- 2) 1463.0 LB T
- 3) 1481.0 LB T
- 4) 1471.0 LB T
- 5) 1455.0 LB T
- 6)
- 7)
- 8)

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)

OTHER MECHANICAL TEST DATA

☐ MEET MAGNETIC PERMEABILITY
REQUIREMENTS OF ASTM A342

PARTS ARE FREE FROM MERCURY AND ASBESTOS CONTAMINATION.
VISUAL AND DIMENSIONAL INSPECTION SATISFACTORY

OTHER TESTING:

FINISH

CAD TYPE I CLASS 3 PER AMS QQ-P-416 REV C

INSPECTED TO: ANSI/ASQ Z1.4 LEVEL 2

ADDITIONALLY, AN ANSI/ASQC Z 1.4 SAMPLE OF THE FINISHED FASTENERS WERE TESTED IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. SAMPLE PARTS AND THE TEST DATA ARE IN OUR RECORDS RETENTION AREA AS OBJECTIVE EVIDENCE AND WILL BE HELD AS REQUIRED.

Signature

TRACEY NIKSA, QC TECH

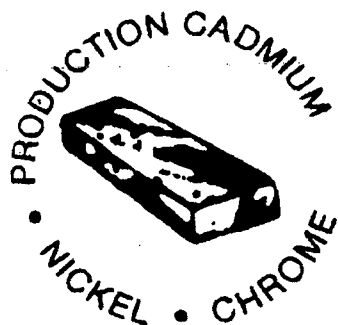
CRESCENT MANUFACTURING OPERATING, CO.



Cage Code #63020

700 George Washington Turnpike, Burlington, CT 06013, U.S.A.

Telephone: (860) 673-2591 Fax: (860) 673-5973



New Method Plating Co., Inc.

QUALITY
MANAGEMENT
SYSTEM
ISO 9001:2000
AS9100 REV. B
CERTIFIED

Established 1931



43 Hammond St.
Worcester, MA 01610
Phone 508.754.2671
Fax 508.754.1981
www.newmethodplating.com

CERTIFICATE OF COMPLIANCE

COMPANY CRESCENT MFG. CO.

DATE 11/1/12

PO#

QUANTITY

28409

12,000

JOB # 10-32 x 15/16 ph flat AN507-1032R15

CADMIUM PLATED IN ACCORDANCE WITH AMS QQ-P-416C

Class III Type I (Clear X Yellow Black)

Hardness: NA HRC

☒ **NO BAKE**

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 8 hours.

☐ Before plating, bake at 275+/-25F for 5 hours. After plating, bake at 275+/-25F for 23 hours.

☐ Before plating, bake at 375+/-25F for 4 hours. After plating, bake at 375+/-25F for 23 hours.

Thickness Test Results

Accept ☒ Reject ☐ Min.: Spec. .0002 Read .00036 Avg. .00039

Adhesion Test Results

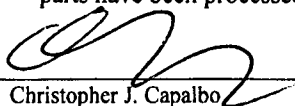
Accept ☒ Reject ☐

Inspected by: 

Certification

This lot has been processed, sampled, tested, and inspected in accordance with the contract and specification requirements listed above, and the plating and conversion coating complies with those contract and specification requirements. Process control data is on file and is available upon request. We certify that these parts have been processed in a mercury free environment.

NOV 01 2012

Signed: 

Christopher J. Capalbo

Title: Quality Manager

Date:

CRESCENT MFG
T.R. NO. 168768



Sivaco Québec
A DIVISION OF SIVACO WIRE GROUP 2004 L.P.
800, rue Outaouais, Mataneville (Québec)
Canada, J0M 1P9
Tel: (450) 693-8741
Fax: (450) 460-3629

PHYSICAL TEST REPORT

DATE	SIVACO ORDER NO.
2012-05-25	M438898-1

CUSTOMER

TRU-SPEC METALS, INC
NORTH BRANFORD, CT

LOADING TALLY NO. 823464-00	SHIPPING MEMO NO. 478673	MILL TESTS NO. 222280
PURCHASE ORDER NO. P13289	QUANTITY/ORDERED 8,000 LBS	PRODUCT .178 1018 CHG AKFS SAFS PHOS LUBE 1018178P8P
		ASTM F2282, SAE AIR 1127

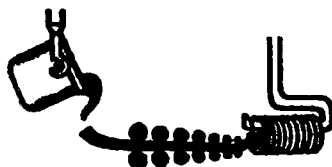
HEAT CHEMICAL ANALYSIS															
HEAT NO.	%C	%Mn	%P	%S	%Ni	%Cu	%Al	%Si	%Nb	%Ti	%Zr	%B	%As	%Co	%Cr
W28678	.17	.70	.007	.001	.08	.080	.08	.07	.08	.008	.001	.0040	.0001		.0058

RESULTS									
SAMPLE	DIAMETER	BREAKING LOAD(LBS)	UT.S. K.S.I.	R.O.A. (%)	SQUASH	HEAT NO	COIL WEIGHT		
SPECIFICATION	.1748 .1776		63.0 MAX	80.00 80.00					
SHP M438898-1	.1763	1385	55.9	78.5	OK	W28678	1650		
SHP M438898-2	.1763	1385	55.9	78.5	OK	W28678	1427		
SHP M438898-3	.1763	1385	55.9	78.5	OK	W28678	1427		
SHP M438898-4	.1763	1405	57.8	78.5	OK	W28678	1750		
SHP M438898-5	.1760	1405	57.8	78.5	OK	W28678	1750		
SHP M438898-6									

NOTES:

APPROVED BY: 3119

CRESCENT MFG
T.R. NO. 1018178P8P



MILL TEST CERTIFICATE

IVACO ROLLING MILLS LP

A HEICO COMPANY

P.O. BOX 322, L'ORIGINAL, ONTARIO, CANADA K0B 1K0

TEL: (613) 675-4871 FAX: (613) 675-6868

90001 0109 **SIVACO QUEBEC**
800 OUELLETTE STREET

MARIEVILLE (QC) J3M 1P5

This report contains analysis data that were produced under subcontract by laboratory Rio Tinto - Fer et Titane, AZLA certificate number 0429-01.

NVLAP only covers the chemistry presented within this certificate. All other data is not covered by the NVLAP accreditation.



Lab Code 200143-0

ATTENTION : Chris Bonilla

VIA : EMAIL

Date Rolled 27-Apr-2012

Date Chemical Analysis Performed

17-Apr-2012

					Date Rolled		27-Apr-2012		Date Chemical Analysis Performed					17-Apr-2012				
P.O. Number	Order Number	Heat Number	Customer Spec.	Spec Rev. No.	Customer Part No.	Billet Order	Grade	Diameter										
120029	40101655	W28978	SQ418	52 20/12/00	42XX	329908	1018AK CHQ	6.50 mm										
Heat Analysis																		
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	N	B	V				
Spec. Min*	.15	.65									.030							
Actual	.17	.70	.007	.001	.08	.03	.07	.05	.003	.001	.060	.0058	.0001	.004				
Spec. Max*	.18	.90	.020	.015	.10	.10	.10	.10	.015	.015	.060	.0080	.0010	.015				

This is to certify that heat number W28978 is in conformance with the required specifications.

Heat analysis obtained by test methods ASTM E415 and ASTM E1019.

*Minimum and maximum refer to the required customer specification.

This is to certify that the material is in conformance with the required specifications.

Radioactive emissions are at background levels.

The wire rod was produced from Continuous Cast billets.

The product has not come in contact with mercury or any of its compounds during processing at L.R.M.

The rod meets SAE AIR 4127

CRESCENT MFG
T.R. NO. 16808

APPROVED BY :

Supervisor, Chemistry Laboratory and Billet Inspection

ISSUED BY QUALITY ASSURANCE :

Date: 30 May 2012

Specification Clerk

This Certificate shall not be reproduced except in full, without the written approval of Ivaco Rolling Mills LP, a Heico Company. This certificate is not to be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Tru-Spec Metals, Inc.

21 Commerce Drive - North Branford, CT 06471 - 888-484-5161 ~ Fax 888-484-5164

6/8/2012

We certify that the following material was supplied by Tru-Spec Metals, Inc. and shipped to
Crescent Manufacturing Company:

<u>Dia.</u>	<u>Grade</u>	<u>Temper</u>	<u>Quantity</u>	<u>Heat #</u>	<u>PO#</u>	<u>Producer</u>
.176"	C1018	SAFS	3,306#	W28978	K12-165	Sivaco

Sincerely,



Linda MacLean
Tru-Spec Metals, Inc.

CRESCENT MFG
T.R. NO. 06868

TRU-SPEC METALS, INC.

21 Commerce Drive
North Banford, CT 06471
PH: 800-345-9473
FAX: 888-360-8404

Packing List

Order #: S35704
Ship Date: 06/07/12
Page: 1

Bill to: CRESCENT MANUFACTURING
P O BOX 1350
BURLINGTON, CT 06013
USA

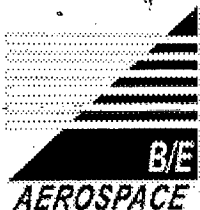
Ship to: CRESCENT MANUFACTURING
700 GEORGE WASHINGTON TPK
BURLINGTON, CT 06013
USA

Customer #	Customer Purchase Order #	Ship Terms	Branch	Salesperson
381	K12-165	MID-CITIES	2	
Item Number / Description		Heat/Lot	Net Wt	
TOTAL LB OF THIS PART			3305	
1018 .176 SAFS AKFG PHLU CHQ		W28978	1655	
1018 .176 SAFS AKFG PHLU CHQ		W28978	1650	
<div style="text-align: center; font-size: 2em;">OK SW 6-7-12</div>				
Special Instructions:				
Total LBS:			3305	

ISO 9001:2000 CERTIFIED
FED TAX I.D. #36-3307958

Office Copy

CRESCENT MFG
T.R. NO. 16868



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
33	100	EA	CR3212-5-07		87387921	CHERRY AEROSPACE SAN	11815		


Jason Lewis
Vice President of Quality

03/06/14



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO321479
Order Date: 04/28/08
Print Date: 12/18/10

Page: 1



Sold-To: 10015341

S O L D T O	B/E AEROSPACE PO BOX 025263 MIAMI, FL 33102-5263 USA
----------------------------	---

Ship-To: 19000244

S H I P T O	B/E AEROSPACE INC C.M. 10000 N.W. 15TH TERRACE MIAMI, FL 33172 USA
----------------------------	---

Salesperson (s):110

Credit Terms: Net 30
Net 30

Purchase Order: 0EZ513

Ship Via: FEDEX NATIONAL
FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship UM	Promised Shipped
4	CR3212-5-07 Customer Item: ASNA0077A507 * ALSO CERTIFY TO: M7885/3-5-07 NAS9302B-5-07 NAS9302BNS-5-07 * PART MEETS DFARS CLAUSE 252.225-7014 ALTERNATE I * PREFERENCE FOR DOMESTIC SPECIALTY METALS EZLINE-3 87387920 EZLINE-3 87387921	1600	12768.0 9233.0	EA 03/01/11 () ()

TEST REPORTS ENCLOSED = DO NOT DESTROY

TOTAL - 22001

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



**CHERRY®
AEROSPACE**
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO321479
Order Date: 04/28/08
Print Date: 12/18/10

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0E2513

Credit Terms: Net 30
Net 30

Ship Via: FEDEX NATIONAL

FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

Ln	Item Number	Site T Location/Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
4	CR3212-5-07 Customer Item: ASNA0077A507 * ALSO CERTIFY TO: M7885/3-5-07 NAS9302B-5-07 NAS9302BNS-5-07 * PART MEETS DFARS CLAUSE 252.225-7014 ALTERNATE I * PREFERENCE FOR DOMESTIC SPECIALTY METALS <small>(IF ONLY FROM THE USA MUST BE SHIPPED WITHIN 90 DAYS FROM DATE OF ORDER)</small> EZLINE-3 87387920 <small>(IF ONLY FROM THE USA MUST BE SHIPPED WITHIN 90 DAYS FROM DATE OF ORDER)</small> EZLINE-3 87387921	1600	12768.0 9233.0	EA	03/01/11

TEST REPORTS ENCLOSED = DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed
DAWN MILLER

**CHERRY AEROSPACE**1224 East Warner Avenue
Santa Ana, CA 92707-0157Accredited Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab**Final Inspection & Test Report**
CherryMax® Rivet**An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.: 87387921 Lot Size: 35,000 MFG. Date: September 25, 2010
CR3212-5-07	AA	PS-CMR-3000	R	
** See 2nd Page for the Customer Parts				

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87387921	A63972	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87390810	A64922	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A64841	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 08040095

Final Lube: WAX

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION		DISASSEMBLY
	1030		445		200		10
	8	N/A	8	N/A	8	N/A	5
	C-N-M	B	C-N-M	B	C-N-M	B	C-N-M
RESULTS	1452		559		377		33
	1436		561		382		34
	1455		574		368		25
	1447		569		390		37
	1476		557		369		31
C=CR N=NAS	1451		568		368		
M=MIL B=BAC	1451		563		355		
LOAD VALUES	1459		569		398		
IN POUND							

<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>	<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>
20	EXAMINATION	PASS	20	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev: -	Q Code
Rev. Date: 9/25/2010	V09
Inspector	
I Reyes	

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



CHERRY[®] AEROSPACE
SPS Partnership Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited

Nadcap[™]

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report CherryMax[®] Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: **87387921**

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9302BNS-5-07	4	NAS1686	3
ASNA0077A507	N	MIL-R-7885	D2
ASNA0077A507	N	NAS1686	3
ASNA0077A507	N	PS-CMR-3000	R
M7885/3-5-07	C1	MIL-R-7885	D2
NAS9302B-5-07	4	NAS1686	3

Parts delivered in accordance with the standard amendments as agreed by Cherry/EADS.

1547 Helton Drive - Florence, AL 35630

SANTA ANA, CA 92707-0157

SANTA ANA, CA 92707-0157

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	5056		0.30		0.40		0.10	0.05	0.20	4.50	5.60	0.05	0.20	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
				0.10											
ALUMINUM REMAINDER															

KAISER ALUMINUM

FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Miscellaneous Notes

Made in USA

Product produced from K540 meets the requirements of aluminum alloy 5056

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

MAR 08 2010



NICHOLS WIRE INC
K-84353



A63972

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despins, Technical Manager

Plant Serial: 4239

Kaiser Order Number: 214512721



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

CHERRY AEROSPACE LLC
1224 E. WARNER AVENUE
SANTA ANA, CA 92705-5414
USA

CERTIFICATION

WORK ORDER
076155

HEAT NO.
10060930
SALES ORDER / RLS
835030-1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CUSTOMER P.O. VPO92778	CUSTOMER PART M272.1145	QUANTITY 1,880 Lbs	CARRIERS 2	LADING NO 00084106	SHIPMENT DATE 06/10/2010
---------------------------	----------------------------	-----------------------	---------------	-----------------------	-----------------------------

SPECIFICATION C208740-101145A

A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating,
Size:0.1135/0.1155 Specifications: AMS2301J, AMS8322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A, M
272.1145 REV. P.

CERTIFICATION REQUIREMENTS

Chemical Properties

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.41	.24	.95	.011	.01	.15	.44	.42	.22

Physical Properties

Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source
6 J5=53	J8=46	J10=40	S2-R1-C2	GOOD	F&S=0	Charter	

Country of Origin
USA - DFEAR Compliant

Mechanical Properties

TEST	UNITS	Results
Tensile Strength	KSI	133.0
Yield Strength	KSI	113.1
% Elongation	%	5
% Reduction of Area	%	53.6
Rockwell Hardness C Scale	HRC	29
Decarb (Total)	In	0.00

JUN 18 2010



Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 107, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(S) are hardness results performed with a 1/16" steel ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.

Material is free of mercury, radium, or alpha contamination.

A64922

WireTech
10060930

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSSM, CSCM/CSCR	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSCM/CSCR	ASTM E572
Macroetch	CSSM, CSCM/CSCR	ASTM E381
Hardenability (Jominy)	CSSM, CSCM/CSCR	ASTM A255; SAE J406; JIS G0561
Grain Size	CSSM	ASTM E112
Tensile Test	CSSR/CSSP, CSFP, CSCM/CSCR	ASTM E8; ASTM A370
Rockwell Hardness	All labs	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSSR/CSSP, CSFP	ASTM A892
Inclusion Content (Methods A, E)	CSSR/CSSP, CSCM/CSCR	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/11.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

JUN 18 2010



A64922

Certificate of Analysis

Radcliff Wire Inc. 97 Ronzo Rd., P.O. Box 603, Bristol, CT 06010

Date Shipped: 5/26/2010

PO #: VP105019

Qty. Shipped: 119 LBS-8-BLACK
MIG SPOOLS

Radcliff No.: 117331

Heat No.: 553577

Customer: CHERRY AEROSPACE
SANTA ANA OPERATIONS
1224 EAST WARNER AVE
SANTA ANA, CA 92705-5414

Country of Origin: USA

Original Mill Source: USA

Size: .0075 X .014 X .081 ***

Material: A286 Stainless Steel

Description: SPECIAL SHAPE

Specification: AMS 5737 REV P, AMS 5731 REV L
CHEM ONLY

Chemical Properties

Al: 0.14%	B: 0.0068%	C: 0.039%	Co: 0%	Cr: 14.07%
Cu: 0%	Mn: 0.32%	Mo: 1.17%	Ni: 24.27%	P: 0.016%
S: 0.0006%	Si: 0.19%	Ti: 2.25%	V: 0.25%	

Notes:

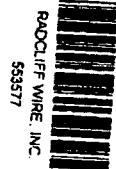
DFAR COMPLIANT
NET WGT 119 LBS
PART# 189.05 REV W

Tensile: 92 KSI

Rockwell:

Certs/Material

JUN 21 2010



A64841

553577

RADCLIFF WIRE, INC.

Lisa Platek

Certification Clerk

The material as shipped is free from mercury contamination

CERTIFICATE OF TESTS

CERT SERIAL# 000655190


CARPENTER

 Carpenter Technology Corporation
 101 West Bern Street, Reading, Pa. 19601
 Tel: (610) 208-2000 (800) 338-4592

ABNAHMEPRUEFZEUGNIS
CERTIFICAT DE CONTROLE

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

04/09/10

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 1

 RADCLIFF WIRE INC
 PO BOX 603
 BRISTOL , CT 06011

CARPENTER TECHNOLOGY CORP

 101 W. BERN STREET
 READING , PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
42178	PHL785701 L36971	04/09/10	711.500

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 553577

PRODUCT DESCRIPTION: A286 ANNEALED COLD FINISH

SIZE 0.042000 IN. (1.07 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%) : (TEST METHOD IS SHOWN IN PARENTHESIS)

C (OES)	MN (XRF)	SI (XRF)	P (OES)	S (OES)	CR (XRF)
0.039	0.32	0.19	0.016	0.0006	14.07
NI (XRF)	MO (XRF)	AL (OES)	TI (OES)	V (XRF)	B (OES)
24.27	1.17	0.14	2.25	0.25	0.0068

TENSILE AS SHIPPED, KSI (MPA) 114.0 (786)

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

 KAY C. DANTZLER
 MET RELEASE / CERT ANALYST
 CARPENTER TECHNOLOGY CORPORATION

JUN 21 2010



A64841

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification by other parties.
 Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keine Haftung für die ausgewiesenen Daten oder Zertifizierungen.
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA-90040
Kind Attn : Cert To Contact

Cust P.O.	6461-6
Customer Part #	8740C1A060-C-R
Charter Sales Order	70007604
Heat #	10060930
Ship Lot #	4017577
Grade	8740 R SK FG AQ 1/4
Process	HRSA
Finish Size	1/4

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10060930

Lab Code: 7388		Test Results of Heat Lot# 10060930										
CHEM	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
%Wt	.41	.95	.011	.01	.24	.44	.42	.22	.15	.009	.001	
	AL	N	B	TI	NB							
	.026	.007	.0002	.002	.002							
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	58	57	57	55	53	51	48	46	43	40	38	37
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	36	35	34	32	32	31	31	30	30	29	30	29



A64922

JOMINY SAMPLE TYPE ENGLISH = B JOMINY LAB = 0358-01
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = 0 AMS 2301 FREQUENCY INDIVIDUAL = 0
AMS 2301 SEVERITY AVERAGE = 0 AMS 2301 SEVERITY INDIVIDUAL = 0
CHEM. DEVIATION EXT.-GREEN =

JUN 18 2010



Test Results of Rolling Lot# 1007492

REDUCTION RATIO = 616:1

Test Results of Processing Lot# 4017352, 4017577

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2	88.6	89.2	88.9	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	66	66	66	RA LAB = 0358-02
ROCKWELL B	2	83	84	84	RB LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = 0 FREE FERR & PARTIAL DECARB = .001
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 80

Specifications:

Manufactured per Charter Steel Quality Manual Rev 8,12-05-07
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3010 Revision = M Dated = 12-MAR-03

Additional Comments:

MEETS REQUIREMENTS OF SPECIFICATIONS AMS6322N/AMS2301J/MIL-S-6049A

Charter Steel
Saukville, WI, USA



Page 1 of 1

Janice Barnard
Janice Barnard
Manager of Quality Assurance
05/17/2010

Rem: Load1, Fax0, Mail0

KAISER ALUMINUM FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

CUSTOMER PO NUMBER: 12940		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 214512721	LINE ITEM: 1	SHIP DATE: 11/09/2009	ALLOY: K540	TEMPER: F	
WEIGHT SHIPPED: 40479 lbs.	QUANTITY: 192 pcs.	B/L NUMBER: 3584	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: NICHOLS WIRE INC. 1547 HELTON AVE FLORENCE, AL 35630			SOLD TO: NICHOLS WIRE INC. 1547 HELTON AVE FLORENCE, AL 35630		

Test Code: 4000

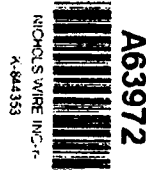
Actual Physical Properties

Lot No.

844353 0.0

Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cr	Zn
844353									
97-4F2	Act.		0.03	0.08	0.00	0.08	4.6	0.07	0.00
146034									
Chemical	Min					0.05	4.5	0.05	
Limits	Max		0.30	0.40	0.10	0.20	4.9	0.20	0.10
		Others	Each	0.05	Max		Total	0.15	Max



MAR 08 2010



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despins, Technical Manager

Plant Serial: 4239

Kaiser Order Number: 214512721

Line Item: 1



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
5	600	EA	AN526C932R9		77135	CRESCENT MFG.	63020		


Jason Lewis
Vice President of Quality

03/06/14

CRESCENT MANUFACTURING

P.O. BOX 1350
BURLINGTON, CT 06013-1350
(860) 673-2591 FAX (860) 673-5973

Picking Ticket	29721
Document Date	8/31/2012
Page	1
Date Time Printed	11/29/2012 7:23:42 AM

Bill To:

B/E AEROSPACE CONSUMABLES MGMNT
PO BOX 025263
MIAMI FL 33102-5263

UNITED STATES

Ship To:

B/E AEROSPACE CONSUMABLES MGMNT
9835 NW 14TH ST
MIAMI FL 33172

UNITED STATES

NO OVER 150#+ FX NAT 018757

FED X SAVER 033101490

④ P Sm

Customer ID	Purchase Order No.	Shipping Method	UPS Account No.	Date	
11610	OKNK32	TRUCK	UPS 363159	11-29-12	
Item Number	Description	Location	Stk Amt	Pick Qty	Qty Picked
AN526C832R9*	8-32 X 9/16 PH TRUSS MARKED HEAD SS PASSIVATE QQ-P-35 DFARS 2X 11m 1x 1.2m			25.0	23.2m 3 Bxs can Complete
CTD	CHEM & PHYS TEST REPORT DFARS COMPLIANT SHIP 1/17/13 SURE NOT B4.			1.0	

VENDOR Carpenter

DIA & TYPE 144-30235

HEAT # 743874

CRESCENT MFG

T.R. NO 7135

APW: 0.0044816 Lbs

MADE IN THE USA

Nº 77135

CERTIFICATE OF COMPLIANCE TEST REPORT

FORM REV A 11/09

MADE IN THE U.S.A.

CUSTOMER NAME B/E AEROSPACE CONSUMABLES

PART NO. AN526C832R9* REV 6

PURCHASE ORDER NO. OKNK32

INTERNAL ROUTING NO. 29721

QUANTITY TWENTY THREE THOUSAND TWO HUNDRED

MATERIAL/SPECIFICATION .144 302HQ CARPENTER 743874

DATE 11/29/2012

PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH APPLICABLE DRAWINGS AND SPECIFICATIONS.

PHYSICAL PROPERTIES

TENSILE STRENGTH HARDNESS SCALE

- | | |
|----------------|----|
| 1) 1583.0 LB T | 1) |
| 2) 1590.0 LB T | 2) |
| 3) 1591.0 LB T | 3) |
| 4) 1577.0 LB T | 4) |
| 5) 1572.0 LB T | 5) |
| 6) | 6) |
| 7) | 7) |
| 8) | 8) |

CONFORMS TO THE PROCUREMENT SPECIFICATIONS OF:

FF-S-92B

DFARS 252.225-7009

OTHER MECHANICAL TEST DATA

- ☒ MEET MAGNETIC PERMEABILITY REQUIREMENTS OF
FF-S-92B, MIL-I-17214B, AND ASTM A342/A 342M TEST
METHOD 3.

PARTS ARE FREE FROM MERCURY AND ASBESTOS CONTAMINATION.

VISUAL AND DIMENSIONAL INSPECTION SATISFACTORY

FINISH

MEETS PASSIVATION REQUIREMENT AMS2700
MTHD 1 CL4/QQ-P-35

OTHER TESTING:

INSPECTED TO: ANSI/ASQ Z1.4 LEVEL 2

ADDITIONALLY, AN ANSI/ASQC Z 1.4 SAMPLE OF THE
FINISHED FASTENERS WERE TESTED IN ACCORDANCE WITH
APPLICABLE SPECIFICATIONS. SAMPLE PARTS AND THE TEST DATA
ARE IN OUR RECORDS RETENTION AREA AS OBJECTIVE EVIDENCE
AND WILL BE HELD AS REQUIRED.

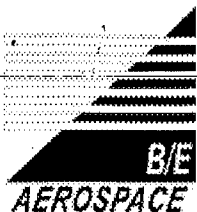
Signature

TRACEY NIKSA, QC TECH

CRESCENT MANUFACTURING OPERATING, CO.



Cage Code #63020
700 George Washington Turnpike, Burlington, CT 06013, U.S.A.
Telephone: (860) 673-2591 Fax: (860) 673-5973



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

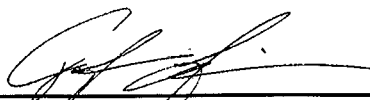
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
22	250	EA	AN4-20A		38673	MAC FASTENERS	ORPT4		


Jason Lewis
Vice President of Quality

03/06/14

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List

Bill M & M Aerospace Hardware
To: PO Box 025263
Miami, FL 33102-526
United States

Ship M & M Aerospace Hardware
To: 10000 N.W. 15th Terrace
Miami, FL 33172
United States

Shipment No: 40608
Shipment Date: 04/08/09
Ship Via: Watkins Freightways
Order Number: 32589
Order Date: 12/29/06

Customer Code: M & M
Phone: (305) 925-2600
PO Number: OAT231
Terms: Net 30 Days

JOB NO. 38673

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	100,000	120,000	0	0	M	AN4-20A Bolt, machine-- Aircraft	1	38673

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: M & M AEROSPACE

DATE: 04/03/09

PO NUMBER: OAT231

PART NUMBER: AN4-20A

REVISION: 1

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225-7014, ALTERNATE 1 COMPLIANT

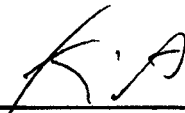
LOT NUMBER: 38673

MANUFACTURED QUANTITY: 120,000

MILL HEAT NUMBER: 8090918

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in conformance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER M & M AEROSPACE	PO NUMBER OAT231	MFG QUANTITY 120,000	DATE 04/03/09
PART NUMBER AN4-20A	REV 1	LOT NO 38673	PROCUREMENT SPEC NASM6812

MATERIAL TYPE 8740				MATERIAL SPECIFICATION MIL-S-6049/AMS6322				MILL HEAT NUMBER 8090918			SUPPLIER CHICAGO WIRE		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.41	.24	.84	.006	.012	.10	.42	.50	.21	.002			.027	
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
		.005							.005				

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
5,500
5,520
5,520
5,500
5,520
MIN. REQ. 4080

DOUBLE SHEAR STRENGTH POUNDS / PSI
8,260
8,240
8,240
8,260
8,260
MIN. REQ. 7360

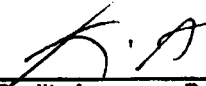
HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 27-30 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection System <input type="checkbox"/> System <input checked="" type="checkbox"/> System <input type="checkbox"/> FED-STD-H28/20 - ASTM B1.3 21 22 23			

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


 Quality Assurance Representative
AS9100, ISO9001 REGISTERED
PJR #C2009-00297

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: M & M AEROSPACE

DATE: 04/03/09

PO NUMBER: OAT231

MANUFACTURED QUANTITY: 120,000

LOT NUMBER: 38673

MATERIAL: TYPE 8740

PART NUMBER: AN4-20A

REVISION: 1

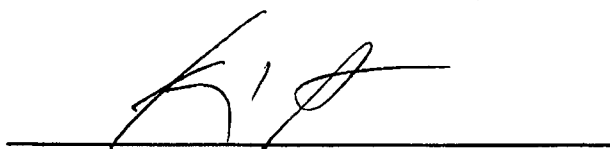
REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27-30 HRC

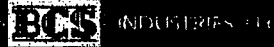
HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

CHICAGO WIRE Division of



CERTIFICATE OF ANALYSIS

FOR: Mac Fasteners

DATE: 11/07/08

VENDOR TAG NO.: J4812

VENDOR PO NO.: 09-340

7,477 lbs.

GRADE: 8740

DESCRIPTION: CHQ WIRE
SIZE: .2465

HEAT NO.: 8090918

CHEMICAL ANALYSIS

<u>C</u>	<u>Mn</u>	<u>P</u>	<u>S</u>	<u>Si</u>	<u>Al</u>	<u>Ni</u>	<u>Cr</u>
.41	.84	.006	.012	.24	.027	.42	.50
<u>Mo</u>	<u>Cu</u>	<u>V</u>	<u>Cb</u>	<u>Ti</u>	<u>N</u>	<u>Sn</u>	
.21	.10	.002	.00	????	.005	.005	

PHYSICAL

	<u>J1</u>	<u>J10</u>	<u>J11</u>	<u>J12</u>	<u>J2</u>	<u>J3</u>	<u>J5</u>	<u>J4</u>
AMS 2301 0000	55	39	37	35	58	57	55	56
MacroClean E-381 111		<u>J6</u>	<u>J7</u>	<u>J8</u>	<u>J9</u>			
		53	49	45	42			

MECHANICAL

<u>TEST</u>	<u>UNITS</u>	<u>HIGH</u>	<u>LOW</u>	<u>AVERAGE</u>
Tensile Str	Lbs/Sqin	85000	83000	84000
RA Area	Sqin	72.2	70.0	70.9
Decarb FFD	Inches	.00	.00	.00
Surface def. depth	Inches	.00	.00	.00

SPECIFICATIONS: AMS2301J AMS 6322N 8740 DFARS Defense Federal Acquisition Regulation Supplement
Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In
Process Heavy Phos & Light Lube Ctd SIZE: .2465

MILL/ROD/MELT SOURCE

Mill Source
Johnstown

Rod Source
Republic

Melt Source
Republic

SUBSCRIBED AND SWORN TO BEFORE ME THIS 7th DAY OF NOVEMBER, 2008. WE CERTIFY THE
FOREGOING A TRUE AND ACCURATE REPORT AS REPRESENTED TO US BY OUR SUPPLIERS.

Ray Vogel
General Manager





Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906
Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
087285

TEST REPORT
LOT NUMBER
-8090918
SALES ORDER / RLS
087285 / 2

SOLD TO

Chicago Wire "Division of BCS"
Accounts Payable Department
1047 Douglas Road
Batavia, IL 60510
USA



CUSTOMER P.O. 09-340	CUSTOMER PART 258740 2465 2	QUANTITY 7,477 LBS	COILS 5	LADING NO 00089210	SHIPMENT DATE 09/19/2008							
SPECIFICATION ChiWire-87246 AMS 2301J AMS 6322N 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spherodize Annealed In Process Heavy Phos & Light Lube Ctd Size: .2465 +.001 -.000												
CERTIFICATION REQUIREMENTS												
Chemical												
C .41	Mn .84	P .006	S .012	Si .24	Al .027	Ni .42	Cr .50	Mo .21	Cu .10	V .002		
Cb .00	Ti ????????	N .005	Sn .005									
Physical												
AMS 2301 0000	J1 55	J10 39	J11 37	J12 35	J2 58	J3 57	J5 55	J4 56	J6 53	J7 49	J8 45	J9 42
MacroClean E-381 111												
Mechanical												
TEST	UNITS	HIGH	LOW	AVERAGE								
Tensile Str	Lbs/SqIn	85000	83000	84000								
RA Per Cent	Percent	72.2	70.0	70.9								
Decarb FFD	Inches	.000	.000	.000								
Surface def. depth	Inches	.000	.000	.000								
Rod / Melt Source												
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes									

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

D. L. Deetscreek
D. L. Deetscreek
Director of Quality Assurance



**Johnstown
Wire
Technologies**

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
087285

TEST REPORT
LOT NUMBER
-8090918
SALES ORDER / RLS
087285 / 2

SOLD TO

Chicago Wire "Division of BCS"
Accounts Payable Department
1047 Douglas Road
Batavia, IL 60510
USA



CUSTOMER P.O.	CUSTOMER PART	QUANTITY	COILS	LADING NO	SHIPMENT DATE
09-340	258740 2465 2	7,477 LBS	5	00089210	09/19/2008

SPECIFICATION ChiWire-87246

AMS 2301J AMS 6322N 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spherodize Annealed In Process Heavy Phos & Light Lube Ctd
Size: .2465 +.001 -.000

End of Certification

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

D. L. Deetscreek
D. L. Deetscreek
Director of Quality Assurance



1807 EAST 28TH ST.
PHONE: 330-438-5694

LURAIN, OH 44055
FAX: 330-438-5695

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

August 5, 2008
PAGE 1

OF 2

PURCHASE ORD: 3V669
PART NUMBER: FXT40AA-.438
ORDER NUMBER: 1386244 - 01
HEAT: 8090918

PURCHASE ORDER DATE: 5/22/2008
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 4960-85
REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
C/O C & BL RAILROAD
TRACK 629
JOHNSTOWN, PA 15901

----- MATERIAL DESCRIPTION -----

HOT ROLLED STEEL COILS ALLOY AMS 2301J JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGAUSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS
SIZE: RDS .4380 DIAM X COIL
RDS 11.1252MM DIAM X COIL

----- LADLE CHEMISTRY % -----

C	MN	P	S	SI	CU	NI	CR
0.41	0.84	0.006	0.012	0.24	0.10	0.42	0.50
V	MO	SN	AL	B	CB	N	
0.002	0.21	0.005	0.027	0.0000	0.000	0.0050	

----- CALCULATED TESTS -----

REDUCTION RATIO 863.2 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER
ASTM A29.

----- SEMI - FINISHED RESULTS -----

JOMINY HARDNESS TEST SAE J406/ASTM A255
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32
55 58 57 56 55 53 49 45 42 39 37 35 34 33 33 32 31 30 30 29 29 28 28 28

MACRO ETCH TEST ASTM E381/MIL STD 430
ETCHANT: HCL TEMPERATURE: 170
S R C
AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300
IND AVG IND AVG
FREQ FREQ SEV SEV
PCE 03 0 0 0 0

----- FINISHED SIZE RESULTS -----

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 11726	0.002	0	0.002

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

----- NOTES -----

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019,

R. A. SZELIGA
MANAGER TECH. SERVICES

BY JANET K. HARTLINE

R. A. Szeliga



Republic

ENGINEERED PRODUCTS

1807 EAST 28TH ST.
PHONE: 330-438-5694

LORAIN, OH 44052
FAX: 330-438-5694

CERTIFICATE OF TESTS

REPUBLIC ENGINEERED PRODUCTS

August 5, 2008
PAGE 2

OF 2

PURCHASE ORD: 3V669
PART NUMBER: FXT40AA-.438
ORDER NUMBER: 1386244 - 01
HEAT: 8090918

PURCHASE ORDER DATE: 5/22/2008
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 4960-85
REVISION: 1

LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC ENGINEERED PRODUCTS HEREBY CERTIFY THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND

TESTED IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED

SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EF BLOOM RED. RATIO: 863.2

END OF DATA CC END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684
FILE 1 COPY

R. A. SZELIGA
MANAGER TECH. SERVICES

BY JANET K. HARTLINE

R. A. Szeliga

DE TRAY

Plating Works

Specialized Electro-Plating and Polishing

Nickel

Copper

Decorative Chrome

Satin Chrome

Zinc

Cadmium

Passivate

Bright Dip

Strip Copper

Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

March 30, 2009

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been stress relieved for 4 hours at 375 \pm 25 before cleaning cadmium plated per QQ-P-416/AMS-QQ-P-416/NAS4160, Type II, Class 2. Please reference our Invoice #133758 dated 03/30/09 for:

Lot#-38673

P.N.-AN4-20A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

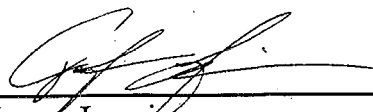
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
57	1000	EA	NAS1149DN832J						
			QTY: 945		X4324	ANILLO INDUSTRIES	10630		
			QTY: 24		X5495	ANILLO INDUSTRIES	10630		
			QTY: 31		X4324	ANILLO INDUSTRIES	10630		


Jason Lewis
Vice President of Quality

03/06/14

2013617819

ANILLO Industries, Inc.

2090 NORTH GLASSSELL STREET, ORANGE, CA 92865-3391 USA

PLEASE REMIT TO

P.O. BOX 5586 ORANGE, CA 92863-5586 USA
(714)637-7000 (562)924-6632 FAX(714) 637-3022AS9100
NADCAP CP
ISO 9001
CERTIFIED**547764****Packing List &****Certification**WE ACCEPT
VISA/MASTER/DISCOVER/AMEX

SOLD TO		1165	SHIP TO		E
B/E AEROSPACE, INC. ATTN: ACCOUNTS PAYABLE DEPT. P.O. BOX 025263 MIAMI, FL 33102-5263			B/E AEROSPACE, INC. CONSUMABLES MANAGEMENT 9835 NW 14TH ST MIAMI, FL 33172		
DATE ORDER REC'D	ORDER NUMBER	INVOICE DATE	SHIPPED VIA	TERMS	
12/20/2011	1A1338		FEDXG 033101490	1% 10 DAYS, NET 30	
ITEM	ORDERED	SHIPPED	DESCRIPTION	NET WEIGHT	

1 2,459,574 **65,000** **NAS1149DN832J**
 MIN/MAX/REV 5 /X4324 /Q:1,6,8,15/AN960JD8 /REF AN960PD8
 ECCN: 9A991 Schedule B#: 7616.10.8000 COO: US NLR

We certify that: 1. item number 1 above is manufactured in accordance with the material and processing specifications of this order.
 2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.
 No good to be returned without written authorization. All claims for defective material must be filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

<< R.M.A.# REQUIRED FOR RETURNS >>

Certification

B/E Aerospace, Inc. - Consumables Management

Self Release

Signature and Stamp:

Date: 07-16-13
 BY Ben Omidwar
 Ben Omidwar, Quality Assurance Manager

FI 4.03.05

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Rob Woodall

Rob Woodall
Director of Manufacturing Davenport Works

Terrence Thom

Terrence Thom
Quality Assurance Manager

Page 1 of 2

1373961 0
Ship Date B.L. No. Invoice No. Alcoa No. Item
2012-04-30 6983190 00000 1000355807-1 DP-55807-1
P.O. No./Govt Contract No. Customer Alcoa Item
TV8097 Ln#: 01 BOEING-TMX G041003170R06

TX2710

818668

Jim
8-22-12

Ship To: THE BOEING COMPANY
TMX AEROSPACE DIVISION
12821 CARMENITA ROAD
UNIT F
SANTA FE SPRINGS 90670 CA

Item Description
0.032 IN TK (+.0020 -.0020) X 48.0 IN W (+.046875 -.046875) CAT X ~~895674-~~
0 (N) A/T ALCLAD 2024-T3 COILED SHEET MILL FINISH 895674-0. AMS-QQ-A-
250/5 REV A IS 2010 AS9103 D6-82479 REV F
((MARKED)) LIGHTLY OILED COIL SIZES: ID
20 IN COIL WGTS: MAX 4750 LB
MAX GROSS SKID WGT: 5000 LB QUAN TOL +/-
10 % CQR 0103046 REV 11 CUST REQ 12-01-
12 *** W/E 12-05-19 ***

Num	Package Ticket	Lot	Weight	Quantity	JOM	Inspector Clock Numbers
1	406086	427662	3413	1	PC	27619 46779
2	406145	427662	3843	1	PC	27619 46779
3	406146	427662	3835	1	PC	27619 46779
			11091	3		

Notes for CQR: 0103046.11

PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ- A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5F, AMENDM ENT 2.
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5F, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AM S-QQ-A-250/5.

CQR: 0103046.11 -Specification Limits

Temp	Dir	UTS	TYS	ELAD
		KSI	KSI	PCT
T3	Long Transv.	Max		
		Min 59.0	39.0	15

07-16-13
NA \$1149 DN 832J
X4324
Signature: *[Signature]*
Title: Quality Records Clerk
AN960JD8



CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Per

Rob Woodall

Rob Woodall
Director of Manufacturing Davenport Works

Terrence Thom

Terrence Thom
Quality Assurance Manager

1373961	0			
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item
2012-04-30	6983190	00000	1000355807-1	DP-55807-1
P.O. No./Govt Contract No.	Customer	Alcoa Item		
TV8097 Ln#: 01	BOEING-TMX	G041003170R06		

Page 2 of 2

CQR: 0103046.11 -Specification Limits (cont.)

Chemical Composition		SI	FE	CU	MN	MG	CR	ZN	TI	Other	
										Each	Total Aluminum
Alloy 2024	Max	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15
	Min			3.8	0.30	1.2					

REMAIN

Chemical Composition		CU	MN	MG	V	ZN	TI	FE+SI	Other	
									Each	Aluminum
LINER	Max	0.10	0.05	0.05	0.05	0.10	0.03	0.70	0.03	
Alloy 1230	Min									99.30

Lot: 427662 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No->	Test	UTS	TYS	EL4D
T3	Long Transv.	2		64	43.8	17.6
				62.5	42.9	20.1

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9560025	Actuals	0.06	0.17	4.8	0.63	1.5	0.01	0.14	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

07-16-13
NAS 1149DN832J
X4324
AN960JDB

Certification

ANILLO INDUSTRIES, INC.
2090 North Glassell st.
Orange, CA. 92865-3391
(714) 637-9110

*This is to certify that the below listed parts were processed per the applicable specification listed below.
Test reports and procedures governing this process are on file and subject to examination.*

CHEMICAL FILM MIL-DTL-5541

Type	Class	Thickness	Revision
I	3		F

Job Number: X4324

P/N REV.: 5

Quantity: 751,390

Visual: Y

Part Number: NAS1149 D N832 J

Adhesion: N

Description: AN960D8

Date: 06/24/13

Authorized by: MARIBEL CUEVAS

Stamp:



FORM # 4.09.117 REV A 05/19/09

ANILLO Industries, Inc.

2090 NORTH GLASSSELL STREET, ORANGE, CA 92865-3391 USA

PLEASE REMIT TO

P.O. BOX 5586 ORANGE, CA 92863-5586 USA

(714)637-7000 (562)924-6632 FAX(714)-637-3022

AS9100
NADCAP CP
ISO 9001
CERTIFIED

2013611104
546556

Packing List & Certification

WE ACCEPT
VISA/MASTER/DISCOVER/AMEX

SOLD TO B/E AEROSPACE, INC. ATTN: ACCOUNTS PAYABLE DEPT. P.O. BOX 025263 MIAMI, FL 33102-5263	1165	SHIP TO B/E AEROSPACE, INC. CONSUMABLES MANAGEMENT 9835 NW 14TH ST MIAMI, FL 33172
--	-------------	---

DATE ORDER REC'D 12/20/2011	ORDER NUMBER 1A1338	INVOICE DATE	SHIPPED VIA FEDXG 033101490	TERMS 1% 10 DAYS, NET 30
ITEM	ORDERED	SHIPPED	DESCRIPTION	NET WEIGHT

1	2,459,574	NAS1149DN832J	
300.000 MIN/MAX/REV 5/X4231/X4324 /Q:1,6,8,15/AN960JD8 /REF AN960PD8 ECCN: 9A991 Schedule B#: 7616.10.8000 COO: US NLR			
ANILLO IND. (CageCode: 10630) Part #: NAS1149DN832J Quantity: 51840 P.O.#: 1A1338 LOT#: X4231 ITEM#: 1 REV. 5 Packed By: SV			
ANILLO IND. (CageCode: 10630) Part #: NAS1149DN832J Quantity: 248160 P.O.#: 1A1338 LOT#: X4324 ITEM#: 1 REV. 5 Packed By: SV			

We certify that: 1. item number 1 above is manufactured in accordance with the material and processing specifications of this order.
2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.
No good to be returned without written authorization. All claims for defective material must be filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

<< R.M.A.# REQUIRED FOR RETURNS >>

Certification

B/E Aerospace, Inc. - Consumables Management

Self Release

Signature and Stamp:

Date: 06-27-13

BY Ben Omidwar
Ben Omidwar, Quality Assurance Manager

FI 4.03.05

CERTIFIED INSPECTION REPORT

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

This test report shall not be reproduced except in full, without the written approval of the Quality Department. No addition, deletion or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Rob d. Woodall

Rob Woodall
Director of Manufacturing Davenport Works

Terence Thom
Quality Assurance Manager

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

1373961 0
Ship Date B.L. No. Invoice No. Alcoa No. Item
2012-04-30 6983190 00000 1000355807-1 DP-55807-1
P.O. No./Govt Contract No. Customer Alcoa Item
-400007 LNH: 01 BOEING-TMX G041003170R06

T40678

Page 1 of 2

Ship To: THE BOEING COMPANY
TMX AEROSPACE DIVISION
12821 CARMENITA ROAD
UNIT F
SANTA FE SPRINGS 90670 CA

Item Description
0.032 IN TK (+.0020 - .0020) X 48.0 IN W (+.046875 - .046875) CAT X-895674
0 (N) A/T ALCLAD 2024-T3 COILED SHEET MILL FINISH 895674-0. AMS-QQ-A-
250/5 REV A IS 2010 AS9103 D6-82479 REV F
((MARKED)) LIGHTLY OILED COIL SIZES: ID
20 IN COIL WGT: MAX 4750 LB
MAX GROSS SKID WGT: 5000 LB QUAN TOL +/-
10 % CQR 0103046 REV 11 CUST REQ 12-01-
12 *** W/E 12-05-19 ***

Num	Package Ticket	Lot	Weight	Quantity	UOM	Inspector Clock Numbers
1	406086	427662	3413	1	PC	27619 46779
2	406145	427662	3843	1	PC	27619 46779
3	406146	427662	3835	1	PC	27619 46779
			11091	3		

Notes for CQR: 0103046.11
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ- A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5P, AMENDM ENT 2.
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5P, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AM S-QQ-A-250/5.
CQR: 0103046.11 -Specification Limits

Tmpr	Dir	UTS	TYS	EL4D
T3	Long Transv.	KSI	KSI	PCT
		Max		
		Min	59.0	39.0 15

CERTIFIED COPY OF ORIGINAL

We hereby certify that this document is a correct copy of reports now on file at Anillo Industries, Inc.

Date: 07-19-13
Part Number: NA\$1149 DN832J
Lot Number: X4324

Signature: *[Signature]*
Title: Quality Records Clerk

AN960JD8 / AN960PD8



CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4878 State Street Bettendorf, IA 52722

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

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Rob Woodell

Rob Woodell
Director of Manufacturing Davenport Works

Terrence Thom
Terrence Thom
Quality Assurance Manager

1373961

Ship Date

2012-04-30

0

B.L. No.

6983190

Invoice No.

00000

Alcoa No. Item

1000355807-1

Ship From: RIVERDALE, IA.

DP-55807-1

P.O. No./Govt Contract No.

TV8097 Ln#: 01

Customer

Alcoa Item

BOEING-TMX G041003170R06

Page 2 of 2

COR: 0103046.11 -Specification Limits (cont.)

Chemical Composition

Alloy 2024

Max	SI	FE	CU	MN	MG	CR	ZN	TI	Other	Other
Min	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15
			3.8	0.30	1.2					

REMAIN

Chemical Composition

LINER

Alloy 1230

Lot: 427662

Max	CU	MN	MG	V	ZN	TI	FE+SI	Other
Min	0.10	0.05	0.05	0.05	0.10	0.03	0.70	0.03

99.30

- Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No. ->	UTS	TYS	EL4D
T3	Long Transv.	Test	KSI	KSI	PCT
		2	64	43.8	17.6
			62.5	42.9	20.1

Cast Number
H9560025

Chemical - OES
Actuals

SI	FE	CU	MN	MG	CR	ZN	TI
0.06	0.17	4.8	0.63	1.5	0.01	0.14	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

CERTIFIED COPY OF ORIGINAL

We hereby certify that this document is a correct copy of reports now on file at Anillo Industries, Inc.

Date:

07-19-13

Part Number:

NA51149DN832J

Lot Number:

X4324

Signature:

Title:

Quality Records Clerk

AN960JD8

AN960PD8

Highway:
17
in-Pack

2013I 1998-7

ANILLO Industries, Inc.

2090 NORTH GLASSELL STREET, ORANGE, CA 92865-3391 USA

PLEASE REMIT TO

P.O. BOX 5586 ORANGE, CA 92863-5586 USA

(714)637-7000 (562)924-8632 FAX(714) 637-3022

AS9100
NADCAP CP
ISO 9001
CERTIFIED**551306****Packing List &****Certification**

WE ACCEPT

VISA/MASTER/DISCOVER/AMEX

SOLD TO		1165	SHIP TO		E
B/E AEROSPACE, INC. ATTN: ACCOUNTS PAYABLE DEPT. P.O. BOX 025263 MIAMI, FL 33102-5263			B/E AEROSPACE, INC. CONSUMABLES MANAGEMENT 9835 NW 14TH ST MIAMI, FL 33172		
DATE ORDER REC'D	ORDER NUMBER	INVOICE DATE	SHIPPED VIA	TERMS	
12/20/2011	1A1338		FEDXG 033101490	1% 10 DAYS, NET 30	
ITEM	ORDERED	SHIPPED	DESCRIPTION		NET WEIGHT

1 2,459,574 **36,585** **NAS1149DN832J**
 MIN/MAX/REV 5 /X6495/Q:1,6,8,15/AN960JD8 /REF AN960PD8
 ECCN: 9A991 Schedule B#: 7616.10.8000 COO: USNLR

We certify that: 1. item number 1 above is manufactured in accordance with the material and processing specifications of this order.
 2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.
 No good to be returned without written authorization. All claims for defective material must filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

<< R.M.A.# REQUIRED FOR RETURNS >>

Certification

B/E Aerospace, Inc.
 Consumable Management
 Self Replace

Signature & Stamp: Date: 09-14-13

BY Ben Omidwar
 Ben Omidwar, Quality Assurance Manager

FI 4.03.05

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

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Rob Woodall
Rob Woodall
Director of Manufacturing Davenport Works

Terence Thom
Terence Thom
Quality Assurance Manager

1373961 0
Ship Date B.L. No. Invoice No. Alcoa No. Item
2012-04-30 6983190 00000 1000355807-1 DP-55807-1
P.O. No./Govt Contract No. Customer Alcoa Item
20037 Ln#: 01 BOEING-TMX G041003170R06

Page 1 of 2

Ship To: THE BOEING COMPANY
TMX AEROSPACE DIVISION
12821 CARMENITA ROAD
UNIT F
SANTA FE SPRINGS 90670 CA

Item Description
0.032 IN TK (+.0020 -.0020) X 48.0 IN W (+.046875 -.046875) CAT X ~~895674-~~
0 (N) A/T ALCLAD 2024-T3 COILED SHEET MILL FINISH 895674-0. AMS-QQ-A-
250/5 REV A IS 2010 AS9103 D6-82479 REV F
(MARKED)) LIGHTLY OILED COIL SIZES: ID
20 IN COIL WGT: MAX 4750 LB
MAX GROSS SKID WGT: 5000 LB QUAN TOL +/-
10 % CQR 0103046 REV 11 CUST REQ 12-01-
12 *** W/E 12-05-19 ***

Num	Package Ticket	Lot	Weight	Quantity	JOM	Inspector Clock Numbers
1	406086	427662	3413	1	PC	27619 46779
2	406145	427662	3843	1	PC	27619 46779
3	406146	427662	3835	1	PC	27619 46779
			11091	3		

Notes for CQR: 0103046.11
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ- A-250/5 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/5P, AMENDM ENT 2.
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/5P, AMENDMENT 2 ALSO MEETS THE REQUIREMENTS OF AM S-QQ-A-250/5.

CQR: 0103046.11 -Specification Limits

Temp	Dir	UTS	TYS	EL4D
		KSI	KSI	PCT
T3	Long Transv.	Max		
		Min	59.0	39.0 15

CERTIFIED COPY OF ORIGINAL
We hereby certify that this document is
correct copy of reports now on
Industrial Inc
Date 09-14-13
Part Number NA 81149DN 832J
X5495
Signature: *[Signature]*
Title Quality Records Clerk

AN960JD8 / AN960PD8

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722



We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

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Per *Rob Woodall*
Rob Woodall
Director of Manufacturing Davenport Works

Terrance Thom
Terrance Thom
Quality Assurance Manager

1373961 0
Ship Date B.L. No. Invoice No. Alcoa No. Item
2012-04-30 6983190 00000 1000355807-1 DP-55807-1
P.O. No./Govt Contract No. Customer Alcoa Item
TV8097 Ln#: 01 BOEING-TMX G041003170R06

Page 2 of 2

CQR: 0103046.11 -Specification Limits (cont.)

Chemical Composition	Max	SI	FE	CU	MN	MG	CR	ZN	TI	Other	
										Each	Total
Alloy 2024		0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.15
	Min			3.8	0.30	1.2					

REMAIN

Chemical Composition	Max	CU	MN	MG	V	ZN	TI	FE+SI	Other	
									Each	Aluminum
Alloy 1230		0.10	0.05	0.05	0.05	0.10	0.03	0.70	0.03	
Lot: 427662	Min									99.30

Lot: 427662 - Mechanical, Physical, Metallography, Quantometer Results

Temp	Dir	No->	Test	UTS	TYS	ELAD
T2	Long Transv.	2		64	43.8	17.6
				62.5	42.9	20.1

Cast-Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9560025		0.06	0.17	4.8	0.63	1.5	0.01	0.14	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

CERTIFIED COPY OF ORIGINAL

We hereby certify that this document is a correct copy of reports now on file with Industrial Inc.

Date 09-14-13
Part Name NA \$1149DN832J
Part Number X549J

Signature: *[Signature]*
Quality Records Clerk

AN960JD8 / AN960PD8

Certification

ANILLO INDUSTRIES, INC.
2090 North Glassell st.
Orange, CA. 92865-3391
(714) 637-9110

This is to certify that the below listed parts were processed per the applicable specification listed below.

Test reports and procedures governing this process are on file and subject to examination.

CHEMICAL FILM MIL-DTL-5541

Type	Class	Thickness	Revision
I	3		F

Job Number: **X5495**

P/N REV.: **5**

Quantity: **795,000**

Visual: **Y**

Part Number: **NAS1149 D N832 J**

Adhesion: **N**

Description: **AN960JD8 / AN960PD8**

Date: **07/13/13**

Authorized by: **MARIA RAMIREZ**

Stamp:



FORM # 4.09.117 REV A 05/19/09



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

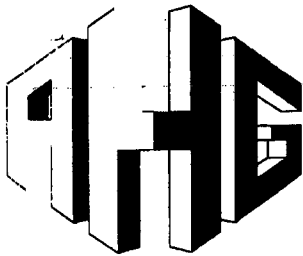
FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
42	250	EA	MS20615-4M18		208112 P001 P001	AHG ATELIERS HAUTE-G	P0095		


Jason Lewis
Vice President of Quality

03/06/14



ATELIERS DE LA HAUTE-GARONNE

Ets AURIOL & Cie S.A. au capital de 146300 EUR - Z.I. de FLOURENS - 31130 FLOURENS - FRANCE

Tél. (33) 5 61 83 60 35 - Fax (33) 5 61 83 95 05 - RCS TOULOUSE B 550 800 528 - SIRET 550 800 528 00014 - APE 287 G

CERTIFICATE of CONFORMITY and TEST REPORT N°A344327

of 21 NOV 2007

Page 1

IMS

Your P.O. nb.: 855942

of: 24 OCT 2007

Supplier number: 1693

N° ack.: 208112

of: 25 OCT 2007

Shipment to (or notify party)

HONEYWELL AEROSPACE
CONSUMABLES SOLUTIONS 710 HENRIETTA CREEK
ALLIANCE GATEWAY 54
76262 ROANOKE ETATS UNIS

INSPECTION SIZE: 13 for VISUAL / DIMENSIONAL

For other test see below column: Test#

ITEM	ORDERED	PART NUMBER	SHIPPED
1	25.000 Lb.	MS20615-4M18 (3) Monel 400 WL 2.4360 univ.head marked chamfer No coating NASM20615 ed.3 July 03	25.000 Lb. 5020 Pcs ** roll sorting

Lot nb **208112 P001 F001**
NATO Cod : F0095

Qty.: 25.000 Lb.

AHG Wire lot nb.: **172891**

Material heat nb.: 69201

Manufacture heading date: 14 NOV 2007 Material Producer : DN

	Mini	Maxi	Value	Unit	Test#
Cis./Shear strength 08-058MD double(D)/simple(S): D Rc/shear strength	49.00	59.00	55.67	KSI	5
D Rc/shear strength	49.00	59.00	58.02	KSI	
D Rc/shear strength	49.00	59.00	55.52	KSI	
D Rc/shear strength	49.00	59.00	55.82	KSI	
D Rc/shear strength	49.00	59.00	54.50	KSI	

Ecrasement/Driveability conforme: O/N 0 defaults/defects 0.00 0.00 3

AL	C	CO	CU	FE	MN	NI + CO	P	PB	S	SI
0,00520	0,05500	0,00000	33,41000	1,55000	0,93000	63,88000	0,00000	0,00000	0,00100	0,11000
SN	ZN	ZN + SN + PB								NI
0,00000	0,00000	0,00000								BALANCE

We hereby declare, subject to exceptions, reservations, or concessions listed in this statement of conformity, that the listed supplies comply with the contract requirements and that, after completion of testing and verification, they satisfy in every respect all specified requirements, and applicable standards and regulations.

SUPPLIER'S INSPECTION

21 NOV 2007

NAME AND FUNCTION

Vincent FABRE Controleur

Computer controlled signature



Honeywell Source Accepted

Stamp Impression : AHG /Ff

Date : 21 NOV 2007

RMRA #

** Estimated quantity



MTR



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
10	100	EA	2600-LW		1613528	ALCOA TORRANCE	3014	71286	


Jason Lewis
Vice President of Quality

03/06/14

Alcoa Fastening Systems



Shipper ID: 841354

Page: 1

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 04/30/13
Print Date: 04/30/13
Time: 09:25:23

Ship Via: FED EX GRD
INCO Terms: FCA TORRANCE

Container/Weight:
Carrier Shipment Ref: 841354
Bill Lading #:

SHIP VIA :FED EX G

BUYER: OLGA

PHONE:

MATERIAL COMPLIES WITH DFARS 252.225-7009 PREFERENCE FOR DOMESTIC SPECIALTY METALS" WITH ITS ALTERNATE 1

***SHIP VIA FEDX GRD COLLECT ACCT# 011-0149-0 IF 150 LBS OR MORE SHIP FED EX FREIGHT ECONOMY COLLECT ACCT# 018757

DO NOT SHIP BY ANY OTHER WITHOUT PROPER WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.

** BAR CODE PER QAP 33 CLAUSE P REQUIRED **

** QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H,P,U,V. CLAUSE A.3 GENERAL TERMS APPLIES.

Sales Order: F430267 Order Date: 04/10/12 Purchase Order: OHEE59

Remarks: VITA

Ln	Item Number	Description	Rev	Qty Shipped	Qty B/O UM
3	BACW10X4	LOCKWASHER (2600-LW)		63729.0	25335.0 EA
	TSO C148				
	Cust Line #:	2			
	Customer Item:	BACW10X4			
	Required Date:	04/01/13	Promised Date:	04/10/13	
	C OF C				
	DUAL CERT TO HS4432-2 &3D0050-3 ***				
	Loc/Lot:	S5FLR 1613528		63,729.00	COO: US
	HTS CODE:	7318220000			
	SCHEDULE-B NUMBER:	7318220000	ECCN:	9A991	

The export classification appears above. You are responsible for all

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY



Shipper ID: 841354

Page: 2

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Ship Date: 04/30/13
Print Date: 04/30/13
Time: 09:25:23

Container/Weight:
Carrier Shipment Ref: 841354
Bill Lading #:

related export license requirements.

PACKING SLIP

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

Alcoa Fastening Systems



Shipper ID: 841354

Page: 1

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 04/30/13
Print Date: 04/30/13
Time: 09:25:23

Ship Via: FED EX GRD
INCO Terms: FCA TORRANCE

Container/Weight:
Carrier Shipment Ref: 841354
Bill Lading #:

SHIP VIA :FED EX G

BUYER: OLGA

PHONE:

MATERIAL COMPLIES WITH DFARS 252.225-7009 PREFERENCE FOR DOMESTIC SPECIALTY METALS" WITH ITS ALTERNATE 1.

***SHIP VIA FED EX GRD COLLECT ACCT# 0331-0149-0 IF 150 LBS OR MORE SHIP FED

EX FREIGHT ECONOMY COLLECT ACCT# 018757 ***

DO NOT SHIP BY ANY OTHER WITHOUT PROPER WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0% -0%.

** BAR CODE PER QAP 33 CLAUSE P REQUIRED **

** QAP 33.0 REV F CLAUSES: A,A.1,B,C,E,H,P,U,V. CLAUSE A.3 GENERAL TERMS APPLIES.

Sales Order: F430267 Order Date: 04/10/12 Purchase Order: 0HEE59

Remarks: VITA

Ln	Item Number	Description	Rev	Qty Shipped	Qty B/O UM
3	BACW10X4	LOCKWASHER (2600-LW)		63729.0	25335.0 EA
	TSO C148				
	Cust Line #: 2				
	Customer Item: BACW10X4				
	Required Date: 04/01/13	Promised Date: 04/10/13			
	C OF C				
	DUAL CERT TO HS4432-2 & 3D0050-3 ***				
	Loc/Lot: S5FLR 1613528		63,729.00		COO: US
	HTS CODE: 7318220000				
	SCHEDULE-B NUMBER: 7318220000	ECCN: 9A991			

The export classification appears above. You are responsible for all

CERTIFICATE OF CONFORMANCE

This is to certify that all items noted below were produced in conformance with the contract, drawing specifications, and other applicable documents. All required process certifications, chemicals and physical test reports are on file subject to examination. This document must not be reproduced except in full and relates only to the items tested.

[Signature]
Director of Quality Assurance
Torrance Operations

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

**Alcoa
Fastening
Systems**



Shipper ID: 841354

Page: 2

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 04/30/13
Print Date: 04/30/13
Time: 09:25:23

Ship Via: FED EX GRD
INCO Terms: FCA TORRANCE

Container/Weight:
Carrier Shipment Ref: 841354
Bill Lading #:

related export license requirements.

***** Total Qty Shipped: 63,729 *****
CERTIFICATION

CERTIFICATE OF CONFORMANCE

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Director of Quality Assurance
Torrance Operations

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CUSTOMER'S COPY

**Alcoa
Fastening
Systems**



3000 W Lomita Blvd
Torrance, California 90505 USA
Tel: 1 310 530 2220
Fax: 1 310 784 4320

Processing Certification

377807

Date

04/26/2013

Lot Number

1599281

Lot Quantity

61043

Part Number

2600-LW

Type of Process

**CADMIUM PLATE
TYPE II, CLASS 2**

I.B.M. Number

415599

Specification

AMS-QQ-P-416C

Material Type

C1075

Mony Barkol

Director of Quality Assurance



APR 26 2013

Lab Tech Stamp / Date

1613588

Lock Washer



TRANSCONTINENTAL METALS

8403 Chetle Avenue
Santa Fe Springs, CA 90670
Phone (562) 464-0418
Fax (562) 464-0450

CUSTOMER: ALCOA FASTENING SYSTEMS

DATE: MAY 30, 2012

PURCHASE ORDERS # 220575770 ✓

SALES ORDER# 8728

SIZE: .015" X 1.812" ✓

QUANTITY: 340# ✓

GRADE: 1075 COIL

SPECIFICATION: ASTM-A-684M-10A

AFS 272670

JUN 12 2012



PART# GPZ_12155875 ✓

HT# NLPP2859 ✓

MILL: L & T ✓

MELT: NLMK


JEFF BROWN QUALITY MANAGER

This is to certify that this material meets all specifications listed. Free from mercury contamination. No weld repair.
Radiation free

Lock Washer 1613528

08/12/2012 10:08 FAX

08/12/2012 09:53 5629216884

Transcontinental Metals

0002/0002

PAGE 01/01

L & T PRECISION SLITTING
14015 GRACEBEE AVE
NORWALK, CA 90650
PHONE: 562-921-5954
FAX: 562-921-6804

Date : 03-09-12

Material Certification Certification of Conformance

Sold To: Transcontinental Metals Ship To: Same

AFS 272670



Customer P.O. No. 8712

L&T P.O. No. 98379

JUN 12 2012

Size: .015 x 1.812

Type:

Specifications: Astm-A684/684M-10a

C-1075 Ann

Net Weight: 1034#

Heat ID No. NLPP2859

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resl
.73	.54	.006	.008	.158	.070	.14	.15	.020	
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
			.001						

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong 2%	Hardness	Bend Test
			86-15T	OK

The Material Listed on This Certification Meets All Specifications Indicated

By: [Signature]
L & T Quality Control Dept.

Mill Source

Lock Washer 1613528



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
43	500	EA	MS21043-4		M014041-000	ALCOA KAYNAR FULLERT	15653		


Jason Lewis
Vice President of Quality

03/06/14

Alcoa Fastening Systems



Packing Slip

Packing Slip: 9948026034

Page: 1

Bill To: 5574
B/E AEROSPACE, INC.
P.O. BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Order Contact:

Pack Date Order # Cust PO Ship Via Weight Pkgs #
02/02/12 F321887 OHA819

Line/Rel Item

14-1 AAT880
H41-4

C/I: MS21043-4

PO Item #:

*** TSO C-148 APPVD PART. TSO LABEL REQUIRED ***

Lot: M014041-000

COO:MEXICO

Waybill:

ECCN:9A991 Schedule-B Number:7318.16.0000

The export classification appears above. You are responsible for all related export license requirements.

CHEM & PHYS & MFG C OF C REQ
DUAL CERT TO H41-4, N8862175/F, NAS1291
A4 AND NAS1291C4 BILL LINE 14,15,16
& 17 TOGETHER

BUYER:CLAUDIA

PHONE: 30

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653 • Eagle Products: Cage Code 66776 • Rosan Products: Cage code 66776
ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON. FOR ITEMS CERTIFIED TO BPS-N-70, ALLOY VERIFICATION HAS BEEN PERFORMED ON PARTS WITH A DATE OF MANUFACTURE ON OR AFTER JANUARY 1, 2001. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

CUSTOMER'S COPY

Alcoa Fastening Systems



Packing Slip



Packing Slip: 9948026034

Page: 2

Bill To: 5574
B/E AEROSPACE, INC.
P.O.BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Order Contact:

=====

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
02/02/12	F321887	OHA819			

=====

Line/Rel Item

/M

Qty Order

Qty Pack

5-592-5155

MATERIAL COMPLIES WITH DFARS 252.225-701

4 REQUIREMENTS, "PREFERENCE FOR

DOMESTIC SPECIALTY METALS" WITH A MINIMUM ANNUAL RATE 1 WHERE APPLICABLE.

****ALLOWABLE SHIPPING TOLERANCE = 5%

0% ***** CHEM & PHYS & MFG

REQ "MUST STATE COUNTRY OF ORIGIN WHERE

PARTS WERE MANUFACTURED ON

CERTIFICATION FOR EACH LOT NUMBER" ALL I

TEMS ON THIS PO MUST BE NEW AND TO

THE LATEST REV MFGS NAME & LOT# MUST APP

EAR ON PACKING SLIP ON ALL PAPER

WORK FOR ALL ITEMS.

IF UNDER 150 # SHIP VIA FED EX GROUND SERVICE: BILL RECIPIENT ACCT:

0331-0149-0. IF OVER 150 # USE FED X N AT'L(WATKINS) ACCT. # 018757. CUST

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15853

Eagle Products: Cage Code 86778

Rosan Products: Cage code 86778

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CUSTOMER'S COPY

Alcoa Fastening Systems



Packing Slip



Packing Slip: 9948026034

Page: 3

Bill To: 5574
B/E AEROSPACE, INC.
P.O.BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
02/02/12	F321887	OHA819			

Line/Rel Item

/M

Qty Order Qty Pack

REF: MUST BE THEIR PO "DO NOT" &
ADD TO ANY OF THE ABOVE METHODS" &
"CONSOLIDATE SHIPMENTS WHERE EVER APPROP
RIATE" DO NOT SHIP PARTS BY ANY
OTHER CARRIER THAN THOSE LISTED ABOVE,
WITHOUT PROPER WRITTEN AUTHORIZATION
FROM M&M.
chem & phys certs

PACKING SLIP

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653

Eagle Products: Cage Code 66776

Rosan Products: Cage code 66776

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CUSTOMER'S COPY

Alcoa Fastening Systems



Packing Slip

Packing Slip: 9948026034

Page: 1

Bill To: 5574
B/E AEROSPACE, INC.
P.O.BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Notice to Subsequent Purchaser or Repacker.
These articles are imported. The requirements of 19 U.S.C.
1304 & CFR part 134 provide that the articles or their
containers must be marked in a conspicuous place as
legibly, indelibly & permanently as the nature of the article or
container will permit, in such a manner as to indicate to an
ultimate purchaser in the United States, the English name of
the country of origin of the article.

Order Contact:

Pack Date Order # Cust PO Ship Via Weight Pkgs #
02/02/12 F321887 OHA819

Line/Rel

CERTIFICATION

14-1

A4 7880
H41

C/I: MS21043-4

PO Item #:

*** TSO C-148 APPVD PART. TSO LABEL REQ'D ***

Cust Date: 02/01/12

Kay Date: 03/01/11

Lot: M014041-000

COO:MEXICO

Waybill:

ECCN:9A991 Schedule-B Number:7318.16.0000

The export classification appears above. You are
responsible for all related export license
requirements.

CHEM & PHYS & MFG C OF C REQ
DUAL CERT TO H41-4, N8862175/F, NAS1291
A4 AND NAS1291C4 BILL LINE 14,15,16
& 17 TOGETHER

BUYER:CLAUDIA

PHONE: 30

CERTIFICATE OF CONFORMANCE

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the contract, drawing specifications, and other applicable documents. All
required process certifications, chemicals and physical test reports are on file
subject to examination. This document must not be reproduced except in
full and relates only to the items tested.

MICHELE M. VARELA
Quality Manager
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

Kaynar Products: Cage Code 15653

Eagle Products: Cage Code 66776

Rosen Products: Cage code 66778

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TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST
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CUSTOMER'S COPY

Alcoa Fastening Systems



Packing Slip

Packing Slip: 9948026034

Page: 2

Bill To: 5574
B/E AEROSPACE, INC.
P.O.BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Order Contact:

Pack Date	Order #	Cust PO	Ship Via	Weight	Pkgs #
02/02/12	F321887	OHA819			

Line/Rel Item Description Order No Pack

5 392-515
MATERIAL COMPLIES WITH DIARS F32-225-701
4 REQUIREMENTS, "PREFERENCE FOR
DOMESTIC SPECIALTY METALS" WITH ITS ALTE
RNATE 1 WHERE APPLICABLE.
****ALLOWABLE SHIPPING TOLERANCE = +5%-1
0% ***** CHEM & PHYS & MFG C OF C
REQ "MUST STATE COUNTRY OF ORIGIN WHERE
PARTS WERE MANUFACTURED ON
CERTIFICATION FOR EACH LOT NUMBER" ALL I
TEMS ON THIS PO MUST BE NEW AND TO
THE LATEST REV MFGS NAME & LOT# MUST APP
EAR ON PACKING SLIP ON ALL PAPER
WORK FOR ALL ITEMS.

IF UNDER 150 # SHIP VIA FED EX GROUND SE
RVICE: BILL RECIPIENT ACCT:
0331-0149-0. IF OVER 150 # USE FED X N
AT'L(WATKINS) ACCT. # 018757. CUST

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Michele M. Varela
MICHELE M. VARELA
Quality Manager
Fullerton Operations

ALCOA GLOBAL FASTENERS, INC.

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Eagle Products: Cage Code 66776

Rosan Products: Cage code 66776

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CUSTOMER'S COPY

Alcoa Fastening Systems



Packing Slip



Packing Slip: 9948026034

Page: 3

Bill To: 5574
B/E AEROSPACE, INC.
P.O. BOX 025263
MIAMI FL 33102-5263
USA

Ship To: (14)
B/E AEROSPACE CONSUM MGMT
9835 NW 14TH ST
MIAMI FL 33172
USA

From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
FULLERTON OPERATIONS
800 SOUTH STATE COLLEGE
FULLERTON CA 92831
USA

Order Contact:

Pack Date Order # Cust PO

Ship Via

Weight Pkgs #

02/02/12 F321887 OHA819

Line/Rel

Item

Order #

Ship To

Package

REF: MUST BE THEIR # DO NOT REPAY
ADD TO ANY OF THE ABOVE METHODS &

"CONSOLIDATE SHIPMENTS WHERE EVER APPROP
RIATE" DO NOT SHIP PARTS BY ANY
OTHER CARRIER THAN THOSE LISTED ABOVE, W
ITHOUT PROPER WRITTEN AUTHORIZATION
FROM M&M.

chem & phys certs

CERTIFICATION

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MICHELE M. VARELA
Quality Manager
Fullerton Operations

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CUSTOMER'S COPY

Alcoa
Fastening
Systems
 Aerospace Products
 Fullerton Operations
 800 S.STATE COLLEGE BLVD
 FULLERTON, CA 92831



TEST REPORT

 NO.
8168300

 Lot No.
M014041-000

 Supplier Item No.
AAT880

 Supplier Part No.
H41-4

 Interchange Part No.
2637654 Rev. B

 Interchange Part No.
525-595-9006 Rev. N

 Interchange Part No.
H41-4

 Interchange Part No.
MS21043-4 Rev. 2

 Interchange Part No.
N8862175/F Rev. 5a

 Interchange Part No.
NAS1291A4 Rev. 13

 Interchange Part No.
NAS1291C4 Rev. 13

Interchange Part No.

Interchange Part No.

 Manufactured Quantity
55250

 Mfg. Date
08/03/11

 Generic Description
6 POINT NUT

 Thread Size
.2500-28

 PLATE/COAT
AMS 2410

 HEAT TREAT
AMS-H-6875

 NON-DESTRUCT
ASTM E1417 SAMPLE

 PERFORMANCE
NASM25027

 Material Spec. # 1
AMS 5731-L

 Mill Heat No.
562964

 Control Heat No.
AA17399

 Material Supplier
CARPENTER TECHNOLOGY CORP
Special Process Requirements:

**THREADS AND GAUGING PER AS8879 AND
 ANSI B1.3M SYS. 22
 MIN EQUALS BKWY MAX EQUALS INST.
 *Conforms to AMS5732H after HT Treat
 MAGNETIC PERMEABILITY LESS THAN 2.0**

TEST RESULTS

----- TEST ----- No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
1 - 010 TORQUE TEST MIN. 3.50 & MAX 30.0 IN LBS (CYC	IN#	1	1	19.45	21.10		3.50	30.00
			7	20.20	21.10			
			15	19.95	20.10			
		2	1	19.40	19.90			
			7	19.40	19.15			
			15	17.00	18.00			
		3	1	21.25	22.90			
			7	37.60	22.80			
			15	21.65	23.90			
		4	1	24.60	26.00			
			7	35.30	25.65			
			15	22.25	23.05			
		5	1	21.05	22.50			
			7	20.40	22.80			
			15	20.95	21.10			
		6	1	18.10	18.05			
			7	16.35	16.55			
			15	16.10	17.30			
		7	1	20.90	20.80			
			7	15.05	16.45			
			15	15.60	18.20			

TEST RESULTS - Continued on next page

THIS REPORT MUST NOT BE REPRODUCED EXCEPT IN FULL AND RELATES ONLY TO THE ITEMS TESTED

The product identified on this Certificate has been manufactured, tested and unless otherwise noted, conforms in all respects to the applicable drawings, specifications and standards. Complete reports of physical and chemical tests are on file for examination. If no specified customer quality level is required, goods conform to sellers quality level. All Damages Exceeding Price are Excluded. For items certified to BPS-N-70 alloy verification has been performed on parts with a date of manufacturing on or after January 1, 2001. Quality system sampling plan conforms to the requirement of QAP EQ001, QAP EQ002, QAP EQ003. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

Michele M. Varela
MICHELE M. VARELA, QA MGR

**Alcoa
Fastening
Systems**

Aerospace Products
Fullerton Operations
800 S.STATE COLLEGE BLVD
FULLERTON, CA 92831

TEST REPORT

NO.

8168300

Lot No.

M014041-000

Supplier Item No.
AAT880Supplier Part No.
H41-4

TEST RESULTS - Continued from previous page

TEST No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
2 - 020 TENSILE TEST 4580.0 LBF IN MIN.	LBS	8	1	21.35	22.40		4580.00	
			7	18.95	20.50			
			15	17.30	19.10			
		9	1	17.80	20.90			
			7	17.25	18.90			
			15	14.80	15.90			
		10	1	16.05	18.00			
			7	18.50	18.80			
			15	14.35	15.05			
		11	1	24.25	23.20			
			7	20.05	19.95			
			15	18.95	19.80			
		12	1	20.40	20.05			
			7	18.25	19.35			
			15	16.60	17.95			
		13	1	12.75	13.85			
			7	16.75	17.75			
			15	10.85	9.85			
		14	1	15.05	16.80			
			7	17.20	17.80			
			15	14.50	15.40			
		15	1	12.10	14.80			
			7	15.85	17.00			
			15	14.50	16.50			
3 - 110 HARDNESS	RC	1	1	4810.00	39.00			
			1	4810.00				
			1	4810.00				
		4	1	4810.00				
			1	4810.00				
			1	4810.00				
		6	1	4810.00				
			1	4810.00				
			1	4810.00				
		8	1	4810.00				
			1	4810.00				
			1	4810.00				
		10	1	6440.00				
			1	4810.00				
			1	4810.00				
		12	1	4810.00				
			1	4810.00				
			1	4810.00				
		14	1	4810.00				
			1	4810.00				
			1	4810.00				
		15	1	4810.00				
			1	4810.00				
			1	38.00				

TEST RESULTS - Continued on next page.

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MICHELE M. VARELA, QA MOR

**Alcoa
Fastening
Systems**Aerospace Products
Fullerton Operations
800 S.STATE COLLEGE BLVD
FULLERTON, CA 92831**TEST REPORT**

NO.

8168300

Lot No.

M014041-000

Supplier Item No.
AAT880Supplier Part No.
H41-4**TEST RESULTS** - Continued from previous page

TEST ----- No. Description	UOM	SAMPLE Number	RESULT Cycle	MINIMUM Value	MAXIMUM Value	PASS/ Fail	MINIMUM Requirement	MAXIMUM Requirement
HRC 38-44								

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MICHELE M. VARELA, QA MGR.

Rev. 12/02 Form 11100

SHIPPER#: 9948026034

CERTIFICATE OF TESTS

CERT SERIAL# 000779636

**CARPENTER**Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

07/01/11

CUSTOMER/BESTELLER/CLIENT

ALCOA FASTENING SYSTEMS
FULLERTON OPERATION
P O BOX 3001
FULLERTON, CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

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SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 3

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
220477028	LOS965301 L36656	07/01/11	4070.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 562964

AA17399

PRODUCT DESCRIPTION: CONSUMET A286 SOLUTION ANNEALED COLD FINISH SEAM FREE C
HDG CL H2 STD CU/LM SOAP
PART NUMBER: 732104SPECIFICATION: FAIRCHILD MS 309 CLASS A REV 16 (09/15/10)
AMS 5731 REV L (06/ /06)
AMS 5732 REV J (09/ /06) (CAPABLE OF)
FAIRCHILD MS 550 REV 2 (12/10/02)

SIZE 0.342000 IN. (8.69 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM) 0.04	MN (XRF) 0.21	SI (XRF) 0.18	P (OES) 0.014	LT S (COM) 0.005	CR (XRF) 14.18
NI (XRF) 24.95	MO (XRF) 1.19	CU (XRF) 0.06	CO (XRF) 0.16	AL (OES) 0.16	TI (OES) 2.13
V (XRF) 0.24	B (OES) 0.0065				

THE CHEMICAL ANALYSIS OF THIS HEAT HAS BEEN PERFORMED BY THE CARPENTER SPECIALTY ALLOYS CHEMICAL LABORATORY, (CODE NUMBER PRI 100004), WHICH WAS ACCREDITED TO THE ISO/IEC 17025.

MILL HEAT TREATMENT:

TYPE	SOLUTION ANNEAL
TEMP	1800F (982C)
TIME AT TEMP	CONTINUOUS FURNACE
QUENCH	WATER

HARDNESS AS SHIPPED, HRBW

86

(MIDRADIUS)

TENSILE AS SHIPPED,

KSI (MPA)

93.0 (641)

GRAIN SIZE PER ASTM E112: 7

7-12-11 K324

CONTINUED ON NEXT PAGE

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SHIPPER#: 9948026034

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000779636



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

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07/01/11

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 3

ALCOA FASTENING SYSTEMS
FULLERTON OPERATION
P O BOX 3001
FULLERTON , CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING , PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
220477028	LOS965301 L36656	07/01/11	4070.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 562964

CAPABILITY

1800 F (982 C) , 01 HR OIL TREAT
1325 F (718 C) , 16 HR AIR COOL

COMBINATION STRESS RUPTURE
TEST TEMP 1200 F (649 C)
STRESS, KSI (MPA) 70.0 (483)
ELONGATION % 29.8
HOURS 55.2

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:
TOTAL HOURS 48 STRESS KSI (MPA) 75.0 (517)

(T) RANSVERSE (L) ONGITUDINAL
YIELD STRENGTH, (0.20 %) KSI (MPA) 101.0 (696)
TENSILE STRENGTH, KSI (MPA) 149.0 (1027)
ELONGATION IN 2.00" , % 26.0
REDUCTION OF AREA, % 48.0
HARDNESS , HBW - 307.0

CAPABILITY

1650 F (899 C) , 02 HR OIL TREAT
1325 F (718 C) , 16 HR AIR COOL

COMBINATION STRESS RUPTURE
TEST TEMP 1200 F (649 C)
STRESS, KSI (MPA) 65.0 (448)
ELONGATION % 40.4
HOURS 56.0

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:
TOTAL HOURS 48 STRESS KSI (MPA) 70.0 (483)

CONTINUED ON NEXT PAGE

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SHIPPER#: 9948026034

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000779636



CARPENTER

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07/01/11

CUSTOMER/BESTELLER/CLIENT

SELLER/VERKÄUFER/VENDEUR PAGE 3 OF 3

ALCOA FASTENING SYSTEMS
FULLERTON OPERATION
P O BOX 3001
FULLERTON , CA 92631

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING , PA 19601

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
220477028	LOS965301 L36656	07/01/11	4070.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:

562964

CAPABILITY

1650 F (899 C) , 02 HR
1325 F (718 C) , 16 HR

OIL TREAT
AIR COOL

(T) RANSVERSE (L) ONGITUDINAL
YIELD STRENGTH, (0.20 %) KSI(MPA)
TENSILE STRENGTH, KSI(MPA)
ELONGATION IN 2.00", %
REDUCTION OF AREA, %
HARDNESS , HBW

L
108.0 (745)
153.0 (1055)
25.0
46.0
308.0

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.
MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIRE-
MENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1,
SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.
CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO
THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE
REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH
3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE
IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

HEIDI L. SUNDAY
GROUPLDR - SPECIFICATIONS/CERTIFICATION
CARPENTER TECHNOLOGY CORPORATION

GPV*732104

Heidi L. Sunday

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SHIPPER#: 9948026034



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
60	15	EA	NAS509-12C		6800	AUTOMATIC SCREW	92595		


Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14



Automatic Screw Machine Products Co.
709 2nd Ave. SE.
P.O. Box 1608
Decatur AL 35601
USA

Phone: 256-353-1931
Fax: 256-355-3612

Pack Slip: 10832

Packing Slip

Page: 1 of 1

Ship To:

M & M Aerospace Hardware (Florida)
10000 N.W. 15th Terrace
Miami FL 33172
USA

Sold To:

M & M Aerospace Hardware (Florida)
P.O. Box 025263
Miami FL 33102-5263
USA

Ship Date: 4/17/2009

Ship Via: Fed Ex National

F.O.B.: Origin FRT Collect

PO Line	Planned Qty	Shipped Qty	Part Number/Description	Rev
Sales Order: 710122		Your PO: OFF444		
	25,000	11,459	NAS509-5 Nut, CD, Thk, Cad Our Part: NAS509-5	6
Lot #: 6619				
Weight: 100				
Pkgs: 3				
DFAR Certs Required				
Sales Order: 710297		Your PO: OFM078		
	3,500	1,287	NAS509-12C Nut, CD, Thk, A286, Pass Our Part: NAS509-12C	6
Lot #: 6800				
Weight: 0				
Pkgs: 0				
DFAR certifications required.				
	7,500	1,238	6,262 NAS509-12C Nut, CD, Thk, A286, Pass Our Part: NAS509-12C	6
Lot #: 6800				
Weight: 206				
Pkgs: 5				
DFAR certifications required.				

Total Shipment Weight: 331



Automatic Screw Machine Products Company

P.O. Box 1608
Decatur, Alabama 35602
Phone: 256-353-1931
FAX: 256-355-3612

Certificate of Compliance

April 17, 2009
Shipper #: 710297

M&M Aerospace Hardware
10000 NW 15th Terrace
Miami, FL 33172

Parts contained in this shipment have been manufactured and inspected in accordance with applicable drawings and specifications.

Purchase Order #:	OFM078		
Print Number:	NAS509	Rev. 6	Part #: NAS509-12C
Procurement Spec:	FF-N-836 Rev. E		
Part Name:	Nut, Drilled, Jam		

Manufacturing Lot #:	6800	Inspection Quantity	2,540 pcs
Mfg. Completion Date:	04/15/09	Quantity Shipped:	2,525 pcs

Material Supplier: Carpenter
Material Size & Type: 1 1/8" Hex, A286 per AMS 5737 "P"
Material Heat #: 556221
This material has been represented to Automatic SMP to be in compliance with DFARS clause 252.225.7014 plus Alternate 1.

Parts were fluorescent penetrant inspected per ASTM E 1417-05 and accepted.
Parts were passivated per AMS 2700 "C" at Techtrix, Inc.
Parts were magnetic permeability inspected per print requirements.
Threads are per AS 8879"D".
All products shipped under this certification are identified with "AD AD".
While in our facility these parts did not come in contact with mercury.
This certification shall not be reproduced, except in full, and applies only to the product shipped here within.
These parts were manufactured in the USA.

Sincerely,

Miranda Johnson
Quality System Specialist

EKTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

ERT SERIAL#, 000674783



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

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12/11/08

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 2

AUTOMATIC SCREW MACHINE PROD
ATTN: MIKE REED

807 2ND AVE SE
DECATUR AL 35602

HVL

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
70539	W97741	12/11/08	3443.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 556221

PRODUCT DESCRIPTION: CONSUMET A286 SOLUTION ANNEALED AGED COLD DRAWN

SPECIFICATION: AMS 5737 REV P (06/ /06)

SIZE 1.125000 IN. (28.58 MM) HEX BAR

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (OES)	MN (XRF)	SI (XRF)	P (OES)	S (OES)	CR (XRF)
0.04	0.37	0.20	0.019	LT .0005	13.69
NI (XRF)	MO (XRF)	CU (XRF)	CO (XRF)	AL (OES)	TI (OES)
24.52	1.18	0.14	0.36	0.15	2.24
V (XRF)	B (OES)				
0.23	0.007				

THIS HEAT MELTED BY THE ARC/AOD + VAR PROCESSES

MILL HEAT TREATMENT:

TYPE	SOLUTION ANNEAL	AGE
TEMP	1650F (899C)	1328F (720C)
TIME (BATCH FURNACE)	2.00 HOURS	16.00 HOURS
QUENCH	WATER	AIR

HARDNESS AS SHIPPED, HBW - 317 (MIDRADIUS)

COMBINATION	STRESS RUPTURE
TEST TEMP	1200 F (649 C)
STRESS, KSI (MPA)	65.0 (448)
ELONGATION %	19.1
HOURS	77.1

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS	STRESS KSI (MPA)
50	70.0 (483)
63	75.0 (517)
73	80.0 (552)

YIELD STRENGTH, (0.20 %) KSI (MPA)	128.0 (883)
TENSILE STRENGTH, KSI (MPA)	162.0 (1117)
ELONGATION IN 2.00", %	22.0
REDUCTION OF AREA, %	44.0

CONTINUED ON NEXT PAGE

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000674783



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

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12/11/08

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 2

AUTOMATIC SCREW MACHINE PROD
ATTN: MIKE REED

807 2ND AVE SE
DECATUR AL 35602

HVL

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
70539	W97741	12/11/08	3443.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 556221
GRAIN SIZE PER ASTM E112: 7

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF SEPTEMBER 2, 2004 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

HEIDI L. SUNDAY
MET RELEASE/REQUIREMENTS ANALYST
CARPENTER TECHNOLOGY CORPORATION



Heidi L. Sunday



Automatic Screw Machine Products Division
709 Second Avenue SE; PO Box 1608
Decatur, Alabama 35602
Telephone (256) 353-1931 Facsimile (256) 355-3612

A2LA Accredited
Laboratory Code #: 5336
Expiration Date: 6/30/2009

6800

LIQUID PENETRANT TEST REPORT

Part Number: NAS509-12C
Item Description: NUT
Specification: ASTM E-1417-05
Technique Number: 23-A1T Type I

Drawing Number: NAS509 Rev. 6
Manufacturing Lot #: 6800
Acceptance Criteria: FF-N-836E
Method: B Sensitivity Level: 3

Penetrant: Magnaflux ZL-27A
Emulsifier: Magnaflux ZE-4B
Penetrant Remover: Water
Developer: Magnaflux ZP-4B

Batch #: 08H017
Batch #: 08F060
Batch #: 07E069

Penetrant Dwell Time: 15 - 60 minutes
Drying Time/Temperature: Varies by part < 160° F
Note: Examination of product is performed within the developer dwell time (10 - 240 minutes).

Emulsifier Dwell Time: <3 minutes
Developer Dwell Time: 10 - 240 minutes

Part Temperature: Between 50 - 125° F

Inspection Location: Part surface

Pre-Cleaning:

Post-Cleaning:

Method

Solvent

- ☐ Ultrasonic
☐ Magnus Part Washer
☒ By Hand

Acid
Mineral Spirit
Kerosene

- ☐ Bowden Washer
☒ By Hand

Detergent
Kerosene

Sampling Plan Used:

ASTM E-1470

Lot Quantity (pcs):

2544

Quantity Accepted (pcs):

2544

Quantity Removed (pcs):

0

Describe any discontinuities as to size, location and number: N/A

Sampling Performed By: SMC

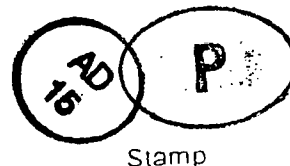
Sample Size (pcs): 13

Indications marked and parts routed to
metallurgical examination (pcs): N/A

Lisa Miller Cagle
Inspector

II
Level

4-7-09
Date



This test report can not be reproduced in any manner of form without consent of Automatic Screw Machine Products Co. and only related to the item(s) tested.



Techtrix Inc.
Certification

Order No.: 76250

Date: 04/14/2009

Entry Date: 04/09/2009

Page: 1 of 1

To:

ASMP
709 2nd Avenue SE
PO Box 1608
Decatur

AL 35602-1608

Purchase Order No.: 75140

Packing List No.: 3186

We are pleased to provide you with the following Certification

Quantity	Part Number / Part Name / Part Description	Pounds
2,540	NAS509-12C JOB:6800	221

PASS 26

It is hereby certified that all articles in the above shipment and in the quantities listed, have had the following operations performed:

PASSIVATE

and conform to the requirements and specifications as required in the contractors Purchase Order. This conclusion has been reached by the following method, the result of which is stated as:

PASSIVATED IN ACCORDANCE WITH SAE AMS 2700 REV C

Appearance: SATISFACTORY

DATE:

4/14/09

Tami Prater ②

Tami Prater
Quality Assurance Manager
Techtrix, Inc.

6800

MAGNETIC PERMEABILITY INSPECTION REPORT

Automatic Screw Machine Products Company
A Subsidiary of Lawson Products, Inc.
709 2nd Avenue SE
Decatur, Alabama 35601

Accreditation: A2LA
Certification #: 0216-01
Exp Date: 6-30-09

Print Number: NAS509

Revision No./Ltr: 6

S.O. Number: NAS509-12C

Lot Number: 6800

Production Lot Size: 2,540

Sample Size: 15

Sampling Plan Utilized: ASTM-F-1470


Sampling Performed by P Blackwood of ASMPC.

The above mentioned samples were checked in accordance with ASTM A342, Test Method 3. The samples were randomly selected and their magnetic permeability checks less than 2.0 (air = 1.0) for a field strength H=200 Oersteds on our indicator.

These samples ✓ conform do not conform to the specification required.

Signed: Patricia Blackwood
Title: Inspector

Date: 4/15/09

Stamp: 

This test report can not be reproduced in any manner or form without the written consent of Automatic Screw Machine Products Company and only relates to the item(s) tested.



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
17	100	EA	AN3-4A		65146	MAC FASTENERS		0RPT4	


Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT

To: 10000 NW 15TH TERRACE
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT

To: 9835 NW 14th Street
Miami, FL 33172
United States

Shipment No: 61793
Shipment Date: 01/02/14
Ship Via: United Parcel Service
Order Number: 46507
Order Date: 10/23/12

Customer Code: BE AEROSPACE
Phone: (305) 925-2600
PO Number: 0KWH04
Terms: Net 30 Days

LOT #65146 & 65147

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
1	100,000	120,000	0		M	AN3-4A Bolt, machine-- Aircraft	65146
2	100,000	120,000	0		M	AN3-4A Bolt, machine-- Aircraft	65147

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0KWH04

PART NUMBER: AN3-4A

REV: 2

LOT NUMBER: 65146

MANUFACTURED QUANTITY: 120,000

MILL HEAT NUMBER: 8172051

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 11/27/13


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER OKWH04	MFG QUANTITY 120,000	DATE 11/27/13
PART NUMBER AN3-4A	REV 2	LOT NO 65146	PROCUREMENT SPEC NASM6812

MATERIAL TYPE 8740				MATERIAL SPECIFICATION MIL-S-6049/AMS6322				MILL HEAT NUMBER 8172051			SUPPLIER JOHNSTOWN		
C .40	Si .25	Mn .86	P .010	S .011	Cu .09	Ni .44	Cr .49	Mo .22	V .003	B	Fe	Al .026	Ti
	Co	N .0043	Bi	Pb	Mg	Zn		Nb	Sn .006			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
2,860
2,870
2,840
2,840
2,870
MIN. REQ. 2,210

DOUBLE SHEAR STRENGTH POUNDS / PSI
TOO SHORT TO TEST PER NASM1312-13
MIN. REQ.

HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 26 - 27 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 11/27/13

PO NUMBER: 0KWH04

MANUFACTURED QUANTITY: 120,000

PROCESSOR:

BODYCOTE MCLEAN - NADCAP ID 4464

LOT NUMBER: 65146

MATERIAL: TYPE 8740

PART NUMBER: AN3-4A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 26 - 27 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

COMMERCIAL PLATING COMPANY

TC-4500 XRF ST

Sat Jul 26 04:13:38 1997

COMMERCIAL PLATING CERTIFICATION AND TEST RESULTS

This is to certify that the order described below was plated to comply with the agreed upon requirements of the requested specification.

DATE: 11/23/13

CUSTOMER: MAC FASTENERS

PART NUMBER: AN3-4A

DESCRIPTION: BOLT

ORDER NUMBER: 92386

LOT NUMBER: 65146

TOTAL WEIGHT: 710 LBS

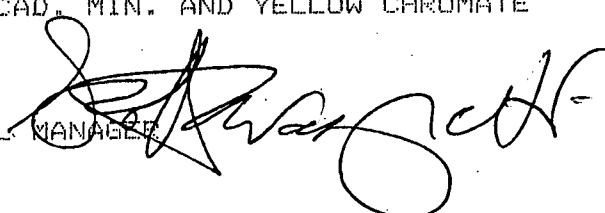
PIECES PLATE TO GAUGE: Y

SPECIFICATION: SAE AMS QQ-P-416C, TYPE II, CLASS 2

REQUIREMENTS: 0.0003 CAD. MIN. AND YELLOW CHROMATE

AUTHORIZED SIGNATURE:

TITLE: QUALITY CONTROL MANAGER





Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
808940

TEST REPORT

LOT NUMBER
K-8172051
SALES ORDER / RLS
001981 / 1

SOLD TO

Mac Fasteners, Inc.
C/O TD Logistics Inc.
14505 W 100th Street
Lenexa, KS 66215
USA



CUSTOMER P.O. 50516	CUSTOMER PART	QUANTITY 18,048 LBS	COILS 9	LADING NO 00119580	SHIPMENT DATE 09/06/2013
SPECIFICATION MacFast-87186 AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In Process Heavy Phos & Light Lube Ctd Size: .1865 +.001 -.000					
CERTIFICATION REQUIREMENTS					
Chemical					
C .40	Mn .86	P .010	S .011	Si .25	Al .026
Ni .44	Cr .49	Mo .22	Cu .09	V .003	
Cb .001	Ti ???????	N .0043	Sn .006		
Physical					
AMS 2301 0000	J1 58	J10 42	J11 39	J12 38	J2 57
					J3 56
					J5 55
					J4 56
					J6 54
					J7 51
					J8 48
					J9 45
MacroClean E-381 111					
Mechanical					
TEST	UNITS	HIGH	LOW	AVERAGE	
Tensile Str	Lbs/SqIn	84000	82000	83000	
RA Per Cent	Percent	73.5	71.2	72.4	
Decarb FFD	Inches	.000	.000	.000	
Surface def. depth	Inches	.000	.000	.000	
Rod / Melt Source					
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes		
End of Certification					

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

Daniel J. Malik
Daniel J. Malik Director of Quality Assurance



CERTIFICATE OF TESTS

 1807 EAST 28TH ST.
 JOHNSTOWN, PA 15404-5580

 LOREAIN, OH 44033
 FAX: 330-438-5699

REPUBLIC STEEL

 6/25/2013
 11:08:00 AM
 PAGE 1 OF 2

 PURCHASE ORD: 84084
 PART NUMBER: FXT40AA-.375
 ORDER NUMBER: 1547434 - 01
 HEAT: 8172051

 PURCHASE ORDER DATE: 3/4/2013
 ACCOUNT NUMBER: 5672-1921-01
 SCHEDULE: 6101-93
 REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

 JOHNSTOWN WIRE TECHNOLOGIES
 124 LAUREL AVE
 JOHNSTOWN, PA 15906

 JOHNSTOWN WIRE TECHNOLOGIES
 EDWARD ZAPOLA
 C/O C & BL RAILROAD
 TRACK 629
 JOHNSTOWN, PA 15901

 ----- MATERIAL DESCRIPTION -----
 HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA
 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS
 JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &
 UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGAUSSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY
 RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS
 SIZE: RDS .3750 DIAM X COIL
 RDS 9.5250MM DIAM X COIL

 ----- LADLE CHEMISTRY % -----

C	MN	P	S	SI	CU	NI	CR
0.40	0.86	0.010	0.011	0.25	0.09	0.44	0.49
V	MO	SN	AL	B	CB	N	
0.003	0.22	0.006	0.026	0.0001	0.001	0.0043	

 ----- CALCULATED TESTS -----
 REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

----- SEMI - FINISHED RESULTS -----

 JOMINY HARDNESS TEST SAE J406/ASTM A255

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32
58	57	56	56	55	54	51	48	45	42	39	38	36	34	34	33	32	31	30	29	29	29	28	28

 MACRO ETCH TEST ASTM E381/MIL STD 430
 ETCHANT: HCl. TEMPERATURE: 170

AVG	S	R	C
1	1	1	1

 MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300

	IND	AVG	IND	AVG
	FREQ	FREQ	SEV	SEV
PCE 03	0	0	0	0

----- FINISHED SIZE RESULTS -----

 DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558
 ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 6579	0.002	0	0.001

 G. KRUTH
 DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



CERTIFICATE OF TESTS

1807 EAST 28TH ST.
SHOWA 330-438-5580LORAIN, OH 44033
FAX 330-438-5695

REPUBLIC STEEL

6/25/2013
11:08:00 AM
PAGE 2 OF 2PURCHASE ORD: 84084
PART NUMBER: FXT40AA-.375
ORDER NUMBER: 1547434 - 01
HEAT: 8172051PURCHASE ORDER DATE: 3/4/2013
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 6101-93
REVISION: 1

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

NOTES (CONTINUED)

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EF BLOOM RED. RATIO: 1177.6

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA
FILE 1 COPY

1-814-532-5684

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
46	100	EA	MS21075L08N		49023	ALCOA FASTENING/REPU	52828		


Jason Lewis
Vice President of Quality

03/06/14

**Alcoa
Fastening
Systems**



Shipper ID: 863494

Page: 1

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:

ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
NEWBURY PARK, REPUBLIC OPERATIONS
1300 Rancho Conejo Blvd
Newbury Park, CA 91320
TEL: (805) 262-4200

Ship Date: 11/25/13
Print Date: 11/25/13
Time: 14:15:07

Ship Via: FEDEX NATIONAL
INCO Terms: FOB Newbury Park

Container/Weight:
Carrier Shipment Ref: 863494
Bill Lading #:

CERT REQ'D TO MS & NAS REV LATEST
PULL 12/21/09

BUYER: YOLANDA

Sales Order: F365466 Order Date: 08/04/10 Purchase Order: 07N834

Remarks: NPR LEGACY ORDER

Ln Item Number

Description

Rev Qty Shipped

Qty B/O UM

1 RFM20A08 Floating Two Lug, C1050 82600.0 104900.0 EA

Reduced Rivet, TSO-C148

Cust Line #: 1

Customer Item: MS21075L08N

Required Date: 10/12/13 Promised Date: 10/21/13

MFG C OF C CHEM & PHYS TEST REPORT REQ

DUAL CERT TO NAS1068A08 & TO MS21075L08

Loc/Lot: f-1801 49023 82,600.00 COO: mx

HTS CODE: 7318160085

SCHEDULE-B NUMBER: 7318160000 ECCN: 9A991

The export classification appears above. You are responsible for all related
export license requirements.

***** Total Qty Shipped:

82,600

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORT TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY


CERTIFICATE OF TEST

WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THE REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE PURCHASE ORDER. WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE OF MANUFACTURE. TEST REPORTS COVERING MATERIALS IN THESE PARTS AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS ARE ON FILE AND SUBJECT TO EXAMINATION. PARTS AS SHIPPED HAVE NEVER BEEN IN CONTACT WITH MERCURY. **THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY.**

PARTS MANUFACTURED IN: ☐ U.S.A. ☒ MEXICO

☐ IN ACCORDANCE WITH: DFAR 252.225.7014 ALT. I and DFAR 252.225.7009

Deelfina Martinez
Signature of Quality Assurance Representative

11-25-13
Date

P.O. No:	0FN834	Item No:	MS21075L08N REV.2
Quantity Ordered:	82,600	Date Cert Ordered:	11-25-13
Customer:	B/E AEROSPACE CONSUMABLES	ID No.:	49023
Description:	ASSEMBLY	Procurement Spec.:	NASM25027
Also Certified To:	NAS1068A08 REV.13 MS21075L08	Additional Info:	RFM20A08
Date of Manufacture:	3-02-11		

Notice to Subsequent Purchaser or Repacker.
These articles are imported. The requirements of 19 U.S.C. 1304 & CFR part 134 provide that the articles or their containers must be marked in a conspicuous place as legibly, indelibly & permanently as the nature of the article or container will permit, in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article.

IF APPLICABLE, CHECK ON BELOW:

☐ **FAA CERTIFICATION (PMA):** IT IS HEREBY CERTIFIED THAT (A) THE PARTS AND/OR MATERIALS REFLECTED HERE-IN WERE PRODUCED UNDER FEDERAL AVIATION ADMINISTRATION APPROVED MANUFACTURING AND QUALITY CONTROL SYSTEMS/METHODS AS SET FORTH IN FEDERAL AVIATION REGULATION, PART 21, SUB-PART K, PARAGRAPH 21.303 AND (B) ALL PARTS AND/OR MATERIALS ARE CERTIFIED NEW, CONFORMS TO THE DESIGN DATA AND ARE IN AIR WORTHY CONDITION.

Signature of Quality Assurance Representative








Date

☒ **TSO-C148 STATEMENT:** THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IS ACCEPTABLE TO OR APPROVE BY THE ADMINISTRATOR.

Deelfina Martinez
Signature of Quality Assurance Representative

11-25-13
Date

FINAL (PROCESSING, LAB, MECHANICAL TESTING) INSPECTION REPORT

Lot Number: 49023	Part Number: RFM20A08	Dwg. Number: NASM21075	Dwg. Rev#: 2	Lot Quantity: 82,600	Date: 11-25-13
Procurement Spec.: NASM25027		Proc. Spec. Rev#: 1	Note: All Specifications Referenced Refer To The Most Current Revision Unless Otherwise Stated		
SAMPLE SIZE	CHARACTERISTIC DESCRIPTION	INSPECTION MEDIA	ACCEPTANCE STAMP	PRODUCTION RELEASE DATE	
3915 NUT	Material: Calstrip Heat: 8TAN1004 Size: .032 X .875	Vendor Certification Alloy Verification		3/2/11	
CAP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
BASKET	Material: Calstrip Heat: 0523-003-004 Size: .025 X .875	Vendor Certification Alloy Verification		3/2/11	
CLIP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
	AMS2759/3 Stainless Steel Only Aged Load: _____	Tensile HRC Hardness Tester	N/A		
15	AMS-H-6875 Steel Only Austempering Load: 30538	Tensile HRC Hardness Tester		5/27/11	
	AMS2410 [] AMS2411 []	Visual Adhesion And Thickness ASTM B568	N/A		
80	AMS-QQ-P-416 Class 1 [] 2✓3 []	Visual Adhesion And Thickness ASTM B568		5/28/11	
	AMS2400	Visual Adhesion And Thickness ASTM B568	N/A		
	Embrittlement Relief	23 [] 48-50 [] Clip Hours Stress At Room Temp Per NASM1312, Test 14	N/A		
	Embrittlement Relief	96 [] Hours Stress At Service Temp Per NASM1312, Test 14 [] BPS-N-70 []	N/A	'	
80	Gold Chromate Treatment Type II	Visual- Workmanship Salt Spray Test of AMS-QQ-P-416		5/28/11	
	Stainless Steel Only Passivated Per AMS-QQ-P-35, AMS2700	Visual High Humidity Test Per NASM1312	N/A		
	Magnetic Permeability <2.0 (Air 1.0) For A Field Strength = 200 Oersteds	Indicator Per ASTM A342 Method 3, Corrosion Resistant Steel Only	N/A		
	Non-Destructive Testing Discontinuities Sample [] 100% []	Magnetic Particle Per ASTM E1444 or Fluorescent Penetrant Per ASTM E1417	N/A		
32 PCS	Carbowax Per C-1315 Drawing Batch No: _____	Visual, Workmanship	N/A		
15	Dry Film Lubricant Per AS5272 Type 1 Batch No: PC14269	Visual, Workmanship, Adhesion Per AS5272 Verify Periodic Salt Spray		11/23/13	
	Microstructure	BPS-N-70 [] NAS3350 []	N/A		
32	Threads Per MIL-S-8879, AS8879	Method B, System 22		5/9/11	



Alcoa Fastening Systems
Aerospace Products · Republic Operations

Quality Operating Procedure

Document: **F-10.706.1**
Revision: 2
Effective Date: 9-25-2010
DCN: 1367

Push-Out, Torque-Out, Wrenching Torque, Tensile Test Results

LOT NUMBER	BPS-N-70 ATTRIBUTE PLAN	NOTE	25027 ATTRIBUTE PLAN
49023	LOT SIZE SS UNDER 9..... 2 9 THRU 15..... 3 16 THRU 25..... 4 26 THRU 90..... 5 91 THRU 280..... 7 281 THRU 3200..... 13 OVER 3200..... 15	ALL SAMPLES TESTED MUST MEET OR EXCEED THE MINIMUM REQUIREMENTS	LOT SIZE SS UNDER 10M..... 5 10M THRU 50M..... 10 50M THRU 100M..... 15✓ OVER 100M..... 27

PUSH-OUT TEST					DATE: <u>11-25-13</u>		MIN. <u>80</u> POUNDS		PUSH-OUT REQUIREMENTS	
90	90	90	90	90						
90	90	90	90	90						
90	90	90	90	90						
								PASS / FAIL		RFM 207-1
									STAMP	

TORQUE-OUT TEST					DATE: <u>11-25-13</u>		WRENCH SN: <u>4678</u>		TORQUE-OUT REQUIREMENTS	
					MIN. <u>45</u>		INCH POUNDS			
50	50	50	50	50						
50	50	50	50	50						
50	50	50	50	50						
								PASS / FAIL		RFM 207-1
									STAMP	

WRENCHING TORQUE TEST					DATE: _____		WRENCH SN: _____		WRENCHING TORQUE REQUIREMENTS	
					MIN. _____		INCH POUNDS			
								PASS / FAIL		
									STAMP	

TENSILE TEST					DATE: <u>11-25-13</u>		MACHINE SN: <u>223253</u>		STAMP <u>RFM 212</u>	
TEST BOLT: <u>4516992-08</u>					25027 REQ <u>1720</u> LBS		BPS-N-70 REQ _____ LBS			
1800	1798	1795	1796	1792	HIGH = <u>1800</u> [<input checked="" type="checkbox"/> PROOF LOAD TEST *					
1793	1796	1796	1795	1797	LOW = <u>1792</u> [] TESTED TO FAILURE					
1793	1794	1798	1794	1794	R = <u>8</u> (RANGE = HIGH MINUS LOW)					
					X = <u>1795.5</u> (AVERAGE TENSILE STRENGTH)					
					R x .4 = <u>3.2</u>					
					X-.4R = <u>1792.3</u>					

*Note: The required Safety Load is 3% minimum above the specified minimum Proof Load requirement as described in QOP 10.702.



FINAL TORQUE AND HARDNESS TEST RESULTS

Lot Number: 49023	Part Number: RFM20A08	Dwg. Number: NASM21075	Dwg. Rev#: 2	Lot Quantity: 82,600
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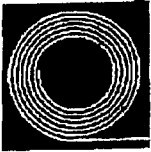
BPS-N-70 ATTRIBUTE PLAN			Other:		25027 ATTRIBUTE PLAN		
Lot Size	Sample Size	Accept	Sample Size	Accept	Lot Size	Sample Size	Accept
UNDER 9	2	0			Under 10M	5	0
9 THRU 15	3	0			10M THRU 50M	10	0
16 THRU 25	4	0			50M THRU 100M	15	0
26 THRU 90	5	0			OVER 100M	27	0
91 THRU 280	7	0					
281 THRU 3200	13	0					
OVER 3200	15	0					

TORQUE TEST														
Test Bolt: MS16997-08					Test Bolt Lot #: 27135M2					Date: 11-25-13			Stamp: RFM 207-1	
Max. In.Lbs.: (1 ST ON) 15.0			Min. In.Lbs.: (1 ST BRK) 1.5			Seated Load: —			NOTE: Record all cycles exhibiting values exceeding or not meeting maximum or minimum requirements as described in QOP 10.703, paragraph 8.7 and 9.11.					
CY	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK
1	10.0	8.0	10.0	8.0	9.0	7.0	8.0	8.0	9.5	8.0				
7	10.0	9.0	9.0	8.0	10.0	8.0	10.0	8.5	9.0	7.0				
15	10.0	9.0	9.0	8.0	10.0	8.0	10.0	8.0	8.0	7.0				
1	10.0	8.0	9.0	7.5	9.0	7.0	10.0	9.0	10.0	9.0				
7	10.0	8.0	9.0	8.0	8.0	7.0	8.0	7.0	8.0	7.0				
15	9.0	8.0	9.0	8.5	9.0	7.0	9.0	7.5	8.0	7.0				
1	10.0	8.0	10.0	9.0	10.0	8.5	10.0	8.5	10.0	8.5				
7	9.0	7.0	8.0	7.5	9.5	8.0	9.0	8.0	8.0	7.5				
15	8.0	6.0	9.0	6.5	10.0	9.0	10.0	8.5	9.0	8.0				
1														
7														
15														

HARDNESS TEST																
CONVERTED FROM 30N SCALE TO HRC per ASTM E140								HRC Requirement: Min.: _____ Max.: 49				Date: 5-27-11			Stamp: RFM 207-1	
HRC	34	34	34	34	36	35	35	35	35	34	36	36	35	36	35	
30N	54.4	54.1	54.4	55.6	55.8	55.2	54.9	54.7	55.3	54.1	55.8	56.0	54.6	55.7	54.6	
15N*																

* CLIPS AND NUTS ONLY

CERTIFIED TEST REPORT



Calstrip Steel Corporation

REGISTERED ISO 9001:2000

7140 Bandini Blvd. * Los Angeles, CA 90040-3388
(323)726-1345 * Fax (323)722-8269

Nut

Customer: ALCOA FASTENING SYSTEMS REPUBLIC Address: REPUBLIC FASTENER 1300 RANCHO CONEJO BLVD. NEWBURY PARK, CA 91320	Order Number: S64083 / W77021 Customer PO: 220498275 Shipped Date: 02/10/2011 Packlist ID: 105493
Part ID: R620-032-875-CS Description: HCCR DOM 1050.032X.875 XCOIL Drawing #: R620-032-875 Rev #:	Material Spec: AMS-5085G, AMS QQS-700B, QQS-635, ASTM A682-05, ASTM A684-10

HeatID: BTAN1004

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.5153	0.7289	0.0090	0.0017	0.1749	0.0757	0.1089	0.1404	0.0188	
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
	0.0009	0.0178	0.0019	0.0300	0.0017			0.0074	

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test
			HRB 77	OK

Grain Size	Olsen Test	Spher%	Decarb	Reduct %
8		100	0	

Skid Numbers	# of Coils	Weight
W77021-1	12	1,815
W77021-2	12	1,801
W77021-3	12	1,833
	36	5,449

RFM
1
AV

Comment: SOURCE- DUFERCO FARRELL (USA)/DFAR COMPLIANT.

11-727

All work on this order has been performed in accordance with the Company's Quality Assurance Manual.

Mario Vargas
MARIO VARGAS Technical Services

Form #:

Print Date: 2/10/2011

Page: 1

CERTIFIED TEST REPORT



Calstrip Steel Corporation

REGISTERED ISO 9001:2000

7140 Bandini Blvd. * Los Angeles, CA 90040-3388

(323)726-1345 * Fax (323)722-8269

Basket

Customer: REPUBLIC FASTENER CO. Address: 1300 RANCHO CONEJO BLVD. NEWBURY PARK, CA 91320	Order Number: S45603 Customer PO: 13798 Shipped Date: 09/24/2008 Packlist ID: 76505
Part ID: R620-025-875-CS Description: HC.CR.1050.025X0.875XCOIL Drawing #: R620-025-875-CS Rev #: 08/20/08	Material Spec: AMS 5085G, AMS QQS 700B, QQS 635, ASTM A682-05, ASTM A684-05

HeatID: 0523-003-004

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.4811	0.6900	0.0187	0.0032	0.1790	0.0200	0.0500			
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test
			HRB 72	OK
Grain Size	Olsen Test	Spher%	Decarb	Reduct %
8		100	0	

<u>Skid Numbers</u>	<u># of Coils</u>	<u>Weight</u>
W56974-1	12	2,050
W56974-2	12	2,209
W56974-3	12	2,062
W56974-4	12	2,210
	48	8,531

Comment: SOURCE- HANKOOK (KOREA)



08-564

All work on this order has been performed in accordance with the Company's Quality Assurance Manual

Mario Vargas
MARIO VARGAS

Technical Services

Form #:

Print Date: 10/2/2008

Page: 1



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
12	20	EA	AN310C3		0508645-340	GREER STOP NUT / SPS 27687			


Jason Lewis
Vice President of Quality

03/06/14

GREER STOP NUT

SPS 481 McNALLY DRIVE • NASHVILLE, TN 37211
TECHNOLOGIES

PACKING LIST

PACKING LIST

PREVENT FRAUD

Any alteration or misuse of this certificate, or any unauthorized rework or modification of the identified products voids all manufacturer's warranties, and may lead to civil damages and/or criminal penalties.

CUSTOMER NBR 01-0001-00427568-0001

B/E AEROSPACE CONSUMABLES
MANAGEMENT
9835 NW 14TH ST.
MIAMI, FL 33172

THE PRODUCTS THAT ARE COVERED BY THIS AGREEMENT ARE OF U.S. ORIGIN OR OTHERWISE SUBJECT TO U.S. EXPORT AND OTHER FOREIGN TRADE CONTROLS. THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS TO OTHER COUNTRIES OR PARTIES MAY REQUIRE THE PRIOR APPROVAL OF THE U.S. GOVERNMENT. DIVERSION OF THESE PRODUCTS FROM THE AUTHORIZED DESTINATION CONTRARY TO U.S. AND INTERNATIONAL LAW IS PROHIBITED. THE PURCHASER AGREES TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES, OTHER RELEVANT JURISDICTIONS, AND PERTINENT INTERNATIONAL ORGANIZATIONS PERTAINING TO THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS. ANY VIOLATIONS OF THIS CLAUSE, AS DETERMINED SOLELY BY SPS TECHNOLOGIES AND OR GREER STOP NUT, SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.

CLAIMS FOR GOODS MUST BE MADE ON RECEIPT OF GOODS. NO MATERIAL ACCEPTED FOR RETURN WITHOUT OUR PERMISSION.

PUBLISHED 11/15/13

ORDER NBR

103445-001

*REFRPT: 11/15/13 09:43:32

ORDER DATE

06/28/13

F/S # 103445001

PAGE

1

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 33102-5263

CUSTOMER PO		CARRIER		DATE	
OFW156		N		10/17/13	
CARRIER CD/DESC		NET TO DAYS		AT	
10/17/13		10/17/13		10/17/13	
TERK ANY TRUCKING FIRM		REG		TERR	
LNE		52		0103	
PRODUCT CODE		COLLECT		UNIT PRICE	
001 0508445		25000		C	
1796C310 1032		25000		C	
UNDER 100W SHIP FEDEX GROUND		25000		C	
H0331-0149-0 MARK COLLECT		25000		C	
OVER 100W SHIP FEDEX GROUND		25000		C	
ACCT H081757		25000		C	
SHIPMENT 100W SHIP FEDEX GROUND		25000		C	
CHEMICAL AND PHYSICAL CERTS CERT TO BOTH		25000		C	
SHIP VARIANCE +/- 5%		25000		C	
TOTAL QUANTITY 25000		25000		C	

LOT NO.	0508645-340					All parts are shipped free of mercury contamination. All damages exceeding price are excluded. GREEN NYLON INSERT is a registered trademark of GREER STOP NUT	
QUANTITY	3,859						
AREA	3A3						
FREIGHT RECORD	WEIGHT	BOXES	PREPD	COLL	CARRIER	BILL OF LADING	FREIGHT CHARGE
	116	1		X	Field Ex Ground		

**GREER STOP NUT**

Greer Stop Nut
481 McNally Drive
Nashville, TN 37211

Phone: 615-832-8375
Fax: 615-331-5070
E-mail: greer@spstech.com

CERTIFICATE OF CONFORMANCE

Date of Certification: November 15, 2013

Sold To: B/E Aerospace Consumables Management
9835 NW 14th St
Miami, FL
33172

Purchase Order No: OPWM56

Customer Part No: AN310C3 Rev.10 & NASM310 Rev. 1

Item No: 001

Greer Part No: L79SC310-1032 Nomenclature: Nut, Plain, Castellated

Lot No/Serial No: 0508645-340 Qty. Manufactured: 31,500 Qty. Shipped: 3,859

Manufacturing Date: 11-8-13

Material: 303 s/s Material Specification: AMS 5640 U / ASTM-A582 12E1 Material Supplier: CARPENTER

Mill Heat No: 744549 Greer Steel Date: JD158R

Procurement Spec: FF-N-836E Threads: MIL-S-7742 Rev. D Am. 1

Surface Finish: Passivate Specification: AMS 2700 MTH. 1, CL 4, Rev. E

Proof Load: 2,210 lbs. Tested To: 2,210 lbs. Sample Size: 4

Non-Destructive Testing: Liquid Penetrant Specification: ASTM E1417-11E1 Sample Size: 29

Fluorescent Penetrant Inspection in accordance with PT2000 Rev. 19 DTD 5/31/12 as modified by PT69811 Rev. 13 DTD 6/25/12

The products identified on this certificate have been manufactured, tested and inspected in accordance with, and unless noted above, conforms in all respects to the applicable drawings, specifications and/or standards. Complete reports of physical and chemical tests are on file for on-site examination. If no specified customer quality level is required, goods conform to seller's quality level. Reproduction except in full is strictly prohibited without written approval of Greer Stop Nut. All damages exceeding price are excluded. Mercury free clause: We certify that no possibility exists for mercury contamination to occur during manufacture, assembly or testing of parts on this contract. This document relates only to the items tested. Parts were manufactured in the United States of America. Sample plans are carried out to current standard/specification revision. Product is compliant to DFARS 252.225-7014 ALT 1.

G and Green Nylon are Trademarks of Greer Stop Nut

Fran Glover
Quality Assurance Coordinator

07/29/2013 1430

11489159.5

FAX

P.007/009

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000885439



CARPENTER

Carpenter Technology Corporation
101 West Bent Street, Reading, Pa. 19601
Tel: (610) 266-6466 (800) 324-4392

07/29/13

CUSTOMER / DESTINATAIRE / CLIENT

GRUER STOP NUT INC
QUALITY DEPARTMENT
481 W. RALLY DRIVE
NASHVILLE, TN 37211

RECEIVED

H.S. 8/7/13

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / NO DE COMMANDE	CARPENTER NO. / SERIE-NR. / NO DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
0013175076	PHL482501 L25053	07/29/13	1223.000

HEAT NUMBER / SCHWELZE-NR. / N° DE COULEUR

744549

UNS NUMBER S30300

PRODUCT DESCRIPTION: CARPENTER STAINLESS TYPE 303 ANNEALED COLD DRAWN
PART NUMBER: OR25037

SPECIFICATION: ASTM-A582-12E1 CONDITION A
AMS 5840 TYPE 1 REV D (10/ /07)
SPS SPS-M-238 REV B (08/06/97) EXCPT LTR (03/28/07) APPROVED
ASTM-A194-12A GR. 8F/8FA CHEM ONLY

SIZE 0.371000 IN. (9.42 MM) HEX BAR

LOT 1

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MM (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.05	1.79	0.56	0.03	0.31	17.35
NI (XRF)	MO (XRF)	CU (XRF)			
8.85	0.35	0.42			

SOLUTION ANNEALED TO PROVIDE A MICROSTRUCTURE FREE FROM CONTINUOUS GRAIN
BOUNDARY CARBIDE PRECIPITATION (NETWORK).

IN PRODUCTION OR TESTING OF MATERIAL SHIPPED AGAINST THIS ORDER, NO DIRECT
CONNECTED MEASURING MANOMETERS, MERCURY PUMPS, MERCURY SEALS, OR MERCURY IN GLASS
THERMOMETERS HAVE BEEN USED. NOR IN SUCH PRODUCTION OR TESTING HAS MERCURY
BEEN HANDLED IN THE IMMEDIATE VICINITY OF SUCH MATERIAL.

THIS MATERIAL CONFORMS TO THE TECHNICAL REQUIREMENTS OF THE AMS SPECIFICATION
REFERENCED ABOVE.

DISCS MACROETCHED AND APPROVED.

MAGNETIC PERMEABILITY <2.00

HARDNESS AS SHIPPED 248HBW (99HRBW)

TENSILE AS SHIPPED, KSI(MPA) 103.0(710)

ACTUAL SPECIMEN SIZE .369"

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING
COUNTRY TO DPMR REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING
COUNTRY 225.872.1, SUPERSEDED BY DPMR REQUIREMENTS DPMR 252.225-7009 AND
252.225-7009.

CONTINUED ON NEXT PAGE

This certificate is made to the customer's order and is not valid unless accompanied by the material to which it refers. The certificate is not valid if the material is not accompanied by the certificate. The certificate is not valid if the material is not accompanied by the certificate. The certificate is not valid if the material is not accompanied by the certificate.

07/29/2013 14:21

114891595

P.008/009

CERTIFICATE OF TESTS
CERT SERIAL# 000866439

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE


CARPENTER

 Carpenter Technology Corporation
 101 West Burn Street, Reading, Pa. 19601
 Tel: (610) 866-6000 (800) 330-6362

07/29/13

CUSTOMER/RETAILER/CLIENT

 GREER STOP NUT INC
 QUALITY DEPARTMENT
 481 MC NALLY DRIVE
 NASHVILLE, TN 37211

CARPENTER TECHNOLOGY CORP

 101 W. BURN STREET
 READING, PA 19601

- BY SIGNING OF THIS CERTIFICATE OF ANALYSIS, THE ANALYST OR OTHER PERSON SIGNING THIS CERTIFICATE OF ANALYSIS IS AT ALL TIMES UNDER THE CLOSEST SUPERVISION OF THE ANALYST.
- THE ANALYST AND OTHER PERSON SIGNING THIS CERTIFICATE OF ANALYSIS ARE NOT TO BE HELD RESPONSIBLE FOR THE RESULTS OF ANALYSIS AND TESTS MADE BY OTHER PERSONS.
- MATERIAL IS REPRESENTED FREE FROM MERCURY, CADMIUM, ALUMINUM AND CHROMIUM CONTAMINATION.
- THIS CERTIFICATE IS NOT TO BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

PAGE 2 OF 2

CUSTOMER ORDER NO./DESIGN-NO./NO DE COMMANDE	CARPENTER NO./ITEMS-NO./NO DE REFERENCE INTERNE	DATE/ORDRE/DATE	WEIGHT/POIDS/POIDS
0013175076	PHL482501 L25053	07/29/13	1223.000

 HEAT TREATMENT / SCHMELZBEHANDLUNG / THERMOTRETTUNG: 744549 ITEM NUMBER S30300
 THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS
 OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

 CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO
 THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-11888 BY PERFORMANCE
 REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE
 WITH EN 10604 (DIN 50045). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE
 IN ACCORDANCE WITH THE PURCHASER ORDER AND SPECIFICATION REQUIREMENTS,
 AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

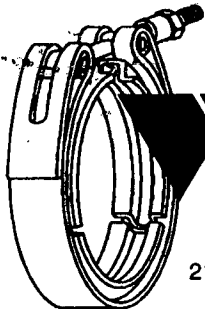
 TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER
 ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

 SHERRY L. KRUIDER
 ADMINISTRATOR - QUALITY
 CARPENTER TECHNOLOGY CORPORATION

0R25037

Sherry Kruidner

This certificate is not to be reproduced or used in any form. Carpenter Technology Corporation is not responsible for the results of analysis and tests made by other persons. This certificate is not to be reproduced, except in full, without the written consent of Carpenter Technology Corporation.



CERTIFICATE OF COMPLIANCE

REF: SWO 42576 C
Lot:

VOSS INDUSTRIES, INC.

Divisions: Voss Aerospace • Clamp Technology • H.E.A.T. (Heat Exchange Applied Technology)
2168 WEST 25TH STREET • CLEVELAND, OHIO 44113-4172 • 216/771-7655 • FAX: 216/771-2887

CUSTOMER:

TRISTAR AEROSPACE INC
PO BOX 542468
DALLAS TX 75354

REFERENCE:

CUSTOMER PURCHASE ORDER NO: AE167AV
CUSTOMER PART NO: MS21920-20
CUSTOMER (OR VOSS) DRAWING NO: MS21920-20
PART NAME: BAND CLAMP
VOSS PART NO: MS21920-20
NO. OF PIECES: 5000

REV. C

We hereby certify that parts and/or materials included in the above shipment have been manufactured and/or processed in compliance with all applicable purchase order and drawing specifications. In addition, data of chemical, physical and mechanical properties, where required, are on file for examination.

VOSS INDUSTRIES, INC.

DONALD G. HENSMAN
QUALITY ENGINEER

Title

Date

JULY 12, 1999

FORM: QF-60

White - Customer Copy; Canary - Office Copy; Pink - Shipping Copy;
Goldenrod - Shipping Copy; White - QC Copy



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO366403
Order Date: 02/23/12
Print Date: 11/03/12

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FSL00

Credit Terms: NET 30
Net 30

Ship Via: FED EX NATIONAL CL
FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

TEST REPORTS ENCLOSED

ECCN: EAR99



DO NOT DESTROY

*IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I
*PREFERENCE FOR DOMESTIC SPECIALTY METALS

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Unless otherwise specified on this order, Cherry will manufacture and
certify parts to the part number's latest revision. Latest revisions are
shown at <https://bizpartner.cherryaerospace.com/partrevisions.htm> under
"Part Number Revision List".

FOR EUROPEAN SHIPMENTS WITH A MAX WEIGHT OF 150# PER PKG AND/OR A MAX
LENGTH OF 274CM PLEASE USE FEDEX ACCOUNT# 2259-703-43

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
1	CR9163-4-04 Customer Item: MS20600AD4W4 	1600	B0902 87713890	43200.0	EA	12/04/12	

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO366403
Order Date: 02/23/12
Print Date: 11/03/12

Page: 2

Sold-To: 10015341



Ship-To: 10043053

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B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102-5263
USA

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B/E AEROSPACE
9835 NW 14TH STREET
MIAMI, FL 33172
USA

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
		C0302	87644308	51300.0		()
		J0505	87606769	9400.0		()

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
 SPS Fastener Division, a PCC Company

Cherry Aerospace
 1224 East Warner Avenue
 Post Office Box 2157
 Santa Ana, CA 92707-0157
 USA



PACKING LIST

Order No: SO366403
 Order Date: 02/23/12
 Print Date: 11/03/12

Page: 1



Sold-To: 10015341

Ship-To: 10043053

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE
	9835 NW 14TH STREET
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FSL00

Credit Terms: NET 30
 Net 30

Ship Via: FED EX NATIONAL CL
 FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
 IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
 DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
 DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

 BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
 AIRBUS APPROVAL# 30114

 GOODS OF UNITED STATES ORIGIN

TEST REPORTS ENCLOSED

ECCN: EAR99

DO NOT DESTROY

 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7009 ALT I
 *PREFERENCE FOR DOMESTIC SPECIALTY METALS

 CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

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 FOR EUROPEAN SHIPMENTS WITH A MAX WEIGHT OF 150# PER PKG AND/OR A MAX
 LENGTH OF 274CM PLEASE USE FEDEX ACCOUNT# 2259-703-43

Ln	Item Number	Site T Location/Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
1	CR9163-4-04 Customer Item: MS20600AD4W4 B0902 87713890	1600	43200.0	EA	12/04/12

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed

DA Miller

DAWN MILLER



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING-LIST

Order No: SO366403
Order Date: 02/23/12
Print Date: 11/03/12

Page: 2



Sold-To: 10015341

Ship-To: 10043053

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B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102-5263
USA

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B/E AEROSPACE
9835 NW 14TH STREET
MIAMI, FL 33172
USA

Ln	Item Number	Site T Location Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped
	1 10015341 0000 0000 0000 0000 0000 0000	C0302 87644308	51300.0	()	
	1 10043053 0000 0000 0000 0000 0000 0000	J0505 87606769	9400.0	()	

TEST REPORTS ENCLOSED = DO NOT DESTROY

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ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

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Signed

D. Miller

DAWN MILLER

**CHERRY[®] AEROSPACE**

274 Hammer Drive, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab**Final Inspection & Test Report**
Cherry[®] Rivet**An ISO9001 and AS9100 registered company. OASIS #6111041606**

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	87606769
CR9163-4-04	J	MIL-R-7885	D2	Lot Size:	10,000
				MFG. Date:	October 29, 2012

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87574451	A68336	2117 ALUM ALLOY	MIL-C-5541	Par-90
Stem	87638905	A68909	2017 ALUM ALLOY	MIL-C-5541	Par-90

W.O. #: 5456292

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	370		15	
	9		9	
			UnLocked	
RESULTS	530	542	66	90
	536		70	
	550		75	
	552		60	
	544		78	
	551		71	
LOAD VALUES IN POUNDS	530		80	
	542		75	

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	13	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev.:
Rev. Date: 10/29/2012Inspector
V Villegas

Insp. Control #:

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

KAISER ALUMINUM

SHIP TO:

1224 EAST WARNER AVENUE

SANTA ANA, CA 92707-0157

SANTA ANA, CA 92707-0157

SOLD TO:

CHERRY AEROSPACE,SPS TECH LLC

ATTN ACCTS PAYABLE

P. O. BOX 2157

SANTA ANA, CA. 92707-0157

		ULTIMATE		YIELD		% ELONGATION	
LOT NUMBER	# OF TESTS	STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K845005	1	26.63	26.63				

COMMENTS:
M262.123 REV F
QQA-430C
MILL SOURCE KAISER
MADE IN USA

K845005

A68336

OCT 04 2011



CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	2117		0.80		0.70	2.20	3.00		0.20	0.20	0.50		0.10	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.25										
ALUMINUM REMAINDER															

**KAISER
ALUMINUM**
FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>


Specifications

QQA-430

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

OCT 04 2011 

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 8267

Kaiser Order Number: 214518953

Line Item: 1

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KAISER ALUMINUM

FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Specifications

QQ-A-430 REV C

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).



DEC 06 2011

Kaiser Aluminum Fabricated
X845795



A68909

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16263

Kaiser Order Number: 624531025

Page 2 of 2

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-622-1151

CUSTOMER PO NUMBER: K-1020-ALLFAST		CUSTOMER PART NUMBER: 6Z37LB		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624531025	LINE ITEM: 1	SHIP DATE: 04/11/2011	ALLOY: KN17	TEMPER: O	
WEIGHT SHIPPED: 20564 lbs.	QUANTITY: 88 pcs.	B/L NUMBER: 8843	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0 000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests		WGU ksi	WGY ksi
846795	3	MIN	25.0	11.8
		MAX	25.2	12.3

Chemical Composition, WT. % (Aluminum Remainder)

Lot Cast/Drop ChemID		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr
846795										
68-1F2	Act.	0.25	0.22	3.9	0.44	0.52	0.00	0.02	0.01	0.00
159318										
Chemical	Min	0.20		3.5	0.40	0.40				
Limits	Max	0.40	0.30	3.90	0.60	0.60	0.04	0.045	0.15	0.05
	Others	Each	0.05	Max		Total	0.15	Max		



DEC 06 2011

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16263

Kaiser Order Number: 624531025

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: 13170-ALLFAST		CUSTOMER PART NUMBER: 6G37L1		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 214518953	LINE ITEM: 1	SHIP DATE: 05/07/2010	ALLOY: 2117	TEMPER: O	
WEIGHT SHIPPED: 37,109 Lbs	QUANTITY: 182 pcs.	B/L NUMBER: 5356	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: NICHOLS WIRE INC 1547 HELTON AVE FLORENCE, AL 35630			SOLD TO: NICHOLS WIRE INC. 1547 HELTON AVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests	WGU
		ksi
845005		

Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cx	Zn
845005									
65-4F2	Act.		0.38	0.39	2.9	0.14	0.40	0.07	0.18
150135									
Chemical	Min				2.2		0.20		
Limits	Max		0.8	0.7	3.0	0.20	0.50	0.10	0.25
			Others	Each	0.05	Max	Total	0.15	Max



CERTIFICATION **OCT 04 2011**

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 8267

Kaiser Order Number: 214518953

Line Item: 1

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CHERRY AEROSPACE
SPS Performance Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited
Nadcap

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report Cherry® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: 87606769

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20600AD4W4	1	MIL-R-7885	D2



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 650 LONGBEACH BLVD, STRATFORD, CT 06615


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
18	30	EA	AN3C16A		60231	MAC FASTENERS	ORPT4		
23	250	EA	AN4C13A		14918	AIRFASCO INDUSTRIES	3Z958		
53	100	EA	MS27039C4-08		45252	MAC FASTENERS	ORPT4		


Jason Lewis
Vice President of Quality

03/06/14

Traveler(s) Heat # Ingot#
11449 A 74FB

CERTIFICATE OF TEST

Page 1 of 6

ATI Allvac
4374 Lancaster Highway
Richburg, SC 29729
Phone (803) 789-3595

Prof 1 Rev 0

Customer Name
BROWN PACIFIC INC.
13639 Bora Drive
Santa Fe Springs, CA

Purchase Order
M2671D-301

Size
.406" Rd.

Alloy
A-286

Pcs 20

Weight 15639

Date: 05/19/2010

Quality Auditor: Diana Adams

Diana Adams

CONDITION SHIPPED

SURFACE: Hot Rolled; Descaled

HEAT TREAT: Mill Annealed / Direct Quenched

SPECIFICATIONS

S-400	10/10/2008	S-4001	06/25/04
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HEADER REMARKS

Capability: AMS 5731 Rev. L
Chemistry only: AMS 5853 Rev C

AMS 5732 Rev J
C50T35 Rev S4 Am.7

AMS 5734 Rev K

AMS 5737 Rev P

ASTM A-453 Rev 2008 Type 660

	CHEMISTRY										CR EQ = Chromium Equiv		Cb = Nb	
	C	S	Mn	Si	Cr	CR EQ	Mo	Co	Ti	Al	H	Zr		
HEAT AVG	.028	<.0003	.28	.16	14.20	-	1.11	.12	2.16	.22	.007	<.01		

Traveler(s) Heat # Ingot#
 11449 A 74FB ATI Allvac 4374 Lancaster Highway Richburg, SC 29729 Phone (803) 789-3595 Page 2 of 6

	Fe	Cu	Ni	P	Cb	Ta	W	V	Cb+Ta	Ti+Al	Ni+Co	Y
HEAT AVG	56.94	.09	24.41	.015	.08	<.01	.03	.18	.08	2.38	24.53	-

CHEMISTRY (TRACE)

	Bi	Ca	Pb	Se	Ag	Sb
HEAT AVG	-	-	-	-	-	-
SLADLE AOD	<.00001	<.0010	<.0001	<.00005	.0001	.0005

CHEMISTRY METHOD

ELEMENTS TESTED BY METHOD

WET-PB	PB
WET-BI	BI
WET-SE	SE
WET-SB	SB
OES-CA	CA
OES-AG	AG
CS-CS	C,S
OES-B	B
XRF-FE(FEBAL)	MO,W,CR,NI,CO,CU,P,NB,TA,ZR,MN,V,TI,AL,SI,FE

CHEMISTRY REMARKS

Chemistry tested at ATI ALLVAC unless otherwise noted.

CHEMISTRY ANALYTICAL METHODS

CS = Combustion/IR Detection

GAS = Inert Gas Fusion

OES = Spark Optical Emission

XRF = X-Ray Fluorescence

WET = Graphite Furnace Atomic Absorption (Se) and Mass Spectroscopy (Pb,Bi,Sb)

Traveler(s)
11449 A

Heat #
74FB

Ingot#

ATI Allvac 4374 Lancaster Highway

Richburg, SC 29729

Phone (803) 789-3595

Page 3 of 6

		Capability						Tensile Test						
Operation	Ingot	Heat Treat Code	Test Dir	Temp F	UTS ksi	2% Yield ksi	.02% Yield ksi	%EL			Gage Length		Tensile Diameter	Tested At
								4D	5D	%RA	4D	5D		
		1650EK	LC	ROOM	166.3	111.4		28.0		52.7	1.00		.253	ACUREN
		1800MB	LC	ROOM	166.6	111.7		28.0		54.0	1.00		.252	ACUREN
		48A	LC	ROOM	92.4	42.0		49.0		66.8	1.00		.2535	ACUREN

Test Dir: L = Longitudinal, T = Transverse, ST = Short Transverse, LT = Long Transverse,
 TC = Transverse Center At Size, TM = Transverse Mid-Radius At Size,
 PC = Pancake, DB = Drawbar, PD = Paddle, TT = Top Transverse At Size,
 BT = Bottom Transverse At Size, LC = Long Center, TX = Top Transverse Mid-Radius At Size,
 LM = Longitudinal Mid Radius, LS = Longitudinal Surface, TS = Transverse Surface
 Operation: SUPER = Crosshead Sep Rate of .10 inches/minute

		Capability										Stress Rupture												Bar	Type
Ingot#	Ht Trt Code	Test Dir	Temp F	Load Ksi	Life Hrs	Upld1 Ksi	Life Hrs	Upld2 Ksi	Life Hrs	Upld3 Ksi	Life Hrs	Upld4 Ksi	Life Hrs	Upld5 Ksi	Life Hrs	Upld6 Ksi	Life Hrs	Upld7 Ksi	Life Hrs	%EL	%RA	Diam	Bar		
	1650EK	LC	1200	65	48.4	70	94.8	75	113	80	122	85	127	-	-	-	-	-	-	23.0		.252	CSN		
	Notch Radius =	.0075	BAR RUPTURED IN THE SMOOTH SECTION												Tested At		ACUREN								
	1800MB	LC	1200	70	48.3	75	98.1	80	113	85	115	-	-	-	-	-	-	-	-	23.0		.253	CSN		
	Notch Radius =	.0075	BAR RUPTURED IN THE SMOOTH SECTION												Tested At		ACUREN								

Test Dir: L = Longitudinal, T = Transverse, ST = Short Transverse, LT = Long Transverse, TC = Transverse Center at size, TM = Transverse Mid-Radius At Size,
 PC = Pancake, DB = Drawbar, PD = Paddle, TT = Top Transverse At Size, BT = Bottom Transverse At Size, LC = Long Center, TX = Top Transverse
 Mid-Radius At Size, LM = Longitudinal Mid Radius, LS = Longitudinal Surface, TS = Transverse Surface
 Type Bar: TSR = Smooth, CN = Center Notch, CSN = Combination Smooth and Notch

		CAPABILITY		HARDNESS	
Ingot	Heat Treat Code	Hardness val	Hardness Type	Tested At	
	1650EK	33	HRC	ACUREN	
	1800MB	34	HRC	ACUREN	
	48A	84	HRBW	ACUREN	

Traveler(s) Heat # Ingot#
11449 A 74FB

ATI Allvac 4374 Lancaster Highway

Richburg, SC 29729

Phone (803) 769-3595

Page 4 of 6

TENSILE/STRESS RUPTURE HEAT TREATMENT

HT Code: 1650EK					Furnace Cool Rate Per Hrs (F)	Cool Code
Location	Temp F	Hours	Mins			
PLANT						MILL ANNEALED / DIRECT QUENCHED
LAB	1650	2				WQ
LAB	1325	16				AC

HT Code: 1800MB					Furnace Cool Rate Per Hrs (F)	Cool Code
Location	Temp F	Hours	Mins			
PLANT						MILL ANNEALED / DIRECT QUENCHED
LAB	1800	1				WQ
LAB	1325	16				AC

HT Code: 48A					Furnace Cool Rate Per Hrs (F)	Cool Code
Location	Temp F	Hours	Mins			
PLANT						MILL ANNEALED/DIRECT QUENCHED

MECHANICAL REMARKS

The tensile and hardness performed for Heat Treat Code 48A are As Shipped tests.

METALLOGRAPHY

GRAIN SIZE (As shipped cond.): Avg. ASTM 8 Tested at Acuren

MACRO

Material has been macro inspected and ultrasonic tested at intermediate billet to clear melt-type(piping,inclusions,etc.)defects.

REMARKS

Material has been produced, sampled, inspected, and tested in accordance with the customer purchase order and referenced specifications and conforms to the requirements unless otherwise noted in this certificate of test.

Any deviations to specification or customer purchase order requirements relative to testing, test values, hot working fixed practices, have been resolved in writing with customer prior to shipment.

The recording of false, fictitious, or fraudulent statements or entries on this document may violate Federal statutes, including but not limited to Title 18, Chapter 47 of the United States Code, and may be punishable as a felony.

If customer purchase order does not specifically reference a revision to a specification, Allvac will work to the latest revision on file and in effect at time of order placement.

Test methods are per the latest ASTM Standards, currently recognized industry practices; or as agreed upon between Allvac and customer.

Any chemical elements analyzed and found to have values below the actual limits of detection may be reported as < less than or reported at the detection level.

When values are reported to the significant places called for in the specifications, rounding will be done in accordance with ASTM E-29.

This is to certify that during manufacturing, handling, testing and inspection, this material did not come in direct contact with mercury or any device employing a single boundary of containment.

This Certificate of Test shall not be reproduced except in full, without the written approval of Allvac Quality.

No weld repair has been performed on this material.

Material Safety Data Sheets (MSDS) - View or print from our site: www.allvac.com. Printed copies available on request from the Allvac Sales Department.

Allvac products have not come in contact with radioactive, fertile or fissionable materials during manufacturing or processing.

Melt source in compliance with DFAR 252.225-7014, Alternate 1.

SPECIAL REMARKS

INGOT MELT SOURCE: Material was AOD melted at Allegheny Ludlum Latrobe Plant, followed by ESR melting at Allvac facility.

Traveler(s)	Heat #	Ingot#			
11449	A	74FB	ATI Allvac 4374 Lancaster Highway	Richburg, SC 29729	Phone (803) 789-3595

Page 6 of 6

Material melted and manufactured in the United States.

GEAE S-400 (GT193) supplier codes: Allvac Monroe - 87012, Allvac Lockport - T1226,
Acuren - T7605, Westmoreland T7869

TEST METHODS: C/S/O/N = ASTM E1019 (2008); XRF = ASTM E572 (2002A/2006*2), ASTM E1085 (1995/2004),
ASTM E2465 (2006); OES = ASTM E415 (2008), ASTM E1086 (2008); RTT = ASTM E8 (2008);
ETT = ASTM E21 (2009); Stress Rupture = ASTM E139 (2006), ASTM E292 (2009); Creep = ASTM E139 (2006);
Charpy = ASTM E23 (2007A*1); Fracture Toughness = ASTM E399 (2008); Rockwell Hardness = ASTM E18 (2008B);
Brinell Hardness = ASTM E10 (2008); ASTM E45 = ASTM E45 (2005*2); AMS 2300 = AMS 2300 (K); Grain Size =
ASTM E112 (1996/2004*2), ASTM E930 (1999/2007), ASTM E1181 (2002/2008).

DE TRAY Plating Works

Specialized Electro-Plating and Polishing
Nickel
Copper
Decorative Chrome
Satin Chrome
Zinc
Cadmium
Passivate
Bright Dip
Strip Copper
Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners, Inc. Lot#: 45252
PART NUMBER: MS27039C4-08
PROCUREMENT SPECIFICATION: n/a
OTHER CONTRACTURAL REQUIREMENTS:
MATERIAL: A286
QUANTITY: 125 lbs.
INVOICE NUMBER: 146357

Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, Type II, AMS2700 Method 1, Type 2, Class 1.

DE TRAY PLATING WORKS

NAME: James T. Lichten

JOB TITLE: VICE-PRESIDENT

DATE: 10/18/2010

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT
To: 10000 NW 15TH TERRACE
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT
To: 9835 NW 14th Street
Miami, FL 33172
United States

Shipment No: 57654
Shipment Date: 02/28/13
Ship Via: United Parcel Service
Order Number: 44013
Order Date: 12/09/11

Customer Code: BE AEROSPACE
Phone: (305) 925-2600
PO Number: 0ELN05
Terms: Net 30 Days

LOT #60231

<u>Item</u>	<u>Quantity</u>					<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>					
1	7,729	9,400	0		M	AN3C16A Bolt, machine-- Aircraft	2		60231

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0ELN05

PART NUMBER: AN3C16A

REV: 2

LOT NUMBER: 60231

MANUFACTURED QUANTITY: 9,400

MILL HEAT NUMBER: 564130

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

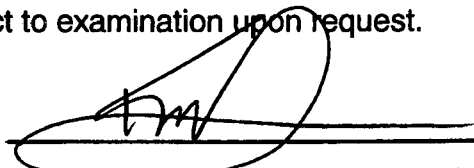
MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 02/27/13



QUALITY ASSURANCE REPRESENTATIVE

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0ELN05	MFG QUANTITY 9,400	DATE 02/27/13
PART NUMBER AN3C16A	REV 2	LOT NO 60231	PROCUREMENT SPEC NASM6812

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 431				ASTM A493				564130			CARPENTER		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.16	.52	.61	.016	.001		1.54	15.8						
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
3,390
3,370
3,390
3,380
3,390
MIN. REQ. 2,210

DOUBLE SHEAR STRENGTH POUNDS / PSI
5,060
5,050
5,050
5,060
5,070
MIN. REQ. 4,250

HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 27-30 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

NDT/ ADDITIONAL TESTS
Magnetic Particle Inspection per ASTM E1444 <input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417 <input type="checkbox"/>
Recess Torque Test <input type="checkbox"/>
Head Marking <input checked="" type="checkbox"/>

[Signature]
Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 02/27/13

PO NUMBER: 0ELN05

MANUFACTURED QUANTITY: 9,400

LOT NUMBER: 60231

MATERIAL: TYPE 431

PART NUMBER: AN3C16A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 27-30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.


QUALITY ASSURANCE REPRESENTATIVE

DE TRAY Plating Works

Specialized Electro-Plating and Polishing
Nickel
Copper
Decorative Chrome
Satin Chrome
Zinc
Cadmium
Passivate
Bright Dip
Strip Copper
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners Lot#: 60231
PART NUMBER: AN3C16A
PROCUREMENT SPECIFICATION: n/a
OTHER CONTRACTURAL REQUIREMENTS:
MATERIAL: 431
QUANTITY: 205 lbs
INVOICE NUMBER: 167705

Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, Type II, AMS2700 Method 1, Type 2, Class 1.

DE TRAY PLATING WORKS

NAME: James T. Liscio

JOB TITLE: VICE-PRESIDENT

DATE: 02/22/2013

CERTIFICATE OF TESTS
CERT SERIAL# 000799705

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19801
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

12/05/11

CUSTOMER / BESTELLER / CLIENT

MAC FASTENERS INC

1110 E. ENTERPRISE
OTTAWA KS 66067

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 1

BOL

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
56366	W86510	12/05/11	2412.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 564130

PRODUCT DESCRIPTION: TYPE 431 ANNEALED COLD FINISH SEAM FREE C HDG CL K2 HVY
----- CU/SOAP TENSILE MAX 115.0 KSI

SPECIFICATION: ASTM-A493-09

SIZE 0.187500 IN. (4.76 MM) RD WIRE

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN(XRF)	SI(XRF)	P (XRF)	S (COM)	CR(XRF)
0.16	0.61	0.52	0.016	0.001	15.8
NI(XRF)					
1.54					

TENSILE AS SHIPPED, KSI(MPA) 107.0(738)
-- -----

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A.
MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIRE-
MENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1,
SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS
OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO
THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE
REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH
3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE
IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

DEANA KISSLING
ADMINISTRATOR - QUALITY
CARPENTER TECHNOLOGY CORPORATION

Deana M. Kissling

INVOICE# HS8L23 ORDER# 8YEX44 PART# AN4C13A

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Airfasco Industries, Inc.

2655 Harrison Ave SW
Canton, OH 44706
Ph: 330-430-6190, Fax: 330-430-6199,

Packing Slip

Original

Invoice #: 120078**Invoice Date: 6/30/2010****Time: 1:13:46 PM****Page: 1****To:**

B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102
USA
Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

Ship To:

B/E AEROSPACE
CONSUMABLES MANAGEMENT
9835 NW 14TH STREET
MIAMI, FL 33172

Cust. PO#: 0FV583**Terms:** NET 60**Ship Via:** FEDEX GROUND CO**Ship Via Acc:****Order Date:** 6/7/2010**# of Items:** 1**# of Boxes:** 7**Weight:****Prepared By:****Sales Order:** 99091**Ship Log #:** 1**Ship Order:****Customer #:** 12726**VAT #:****Cust VAT #:****Ship Date:** 7/2/2010**Buyer:****FOB:****AWB:****Shipment:**

Item	Part Number/Description	Shipped	BackOrd	CD			Unit Price	UOM	Total Amt
1	AN4C13A BOLT, AN Loc/Whse: AFC2 Control #: 139029-1 L-14918 TEST REPORT L-14918	12600	11800	NE				EA	

C OF C ENCLOSED
7 BOXES
PARTS MADE IN USA
THANK YOU!



2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

CERTIFICATE OF CONFORMANCE

B/E AEROSPACE

I hereby certify that on 7/1/2010 AIRFASCO Industries provided the supplies called for by Contract/ PO Number **0FV583** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States.


WM. DENT

Quality Assurance Representative

PART NUMBER	LOT NUMBER	QUANTITY	PART NUMBER	LOT NUMBER	QUANTITY
AN4C13A	14918	12,600			

CIF3-0



AIRFASCO

INDUSTRIES

MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 02/17/09 PART NO.: AN4C13A per NASM4C13A rev. 1
AFC LOT NO.: 14918 QTY MFG.: 25,100
PROCUREMENT SPECIFICATION: Produced per NASM 6812 rev. 2

HEAT TREAT

VENDOR: Bodycote CERTIFICATION NO.: 38-23656
PROCUREMENT SPECIFICATION: Heat Treat per MIL-H-6875 H

PLATING

VENDOR: AFC CERTIFICATION NO.: 09-14918
PROCUREMENT SPECIFICATION: Passivate per AMS2700, Method 2, QQ-P-35

MATERIAL

MILL: Acciaierie Valbruna COUNTRY OF MELT: Italy HEAT: 242894

GRADE SPECIFICATION: Stainless Steel per MIL-S-18732, AMS 5628D, Type 431 SS, .243"

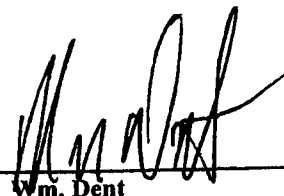
431 SS MATERIAL CHEMISTRY											
ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	Other	Other
LADLE	.150	.560	.028	.001	.410	1.60	15.50	.140	.210		

PHYSICAL PROPERTIES				
PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	4,080 lbs.	3,130 lbs.	3,680 lbs.	HRC 26-32
ACTUAL	5,315 lbs.	4,778 lbs.	4,241 lbs.	HRC 30-31

Non-Destructive Magnetic Particle per ASTM-E-1444-05

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

Airfasco Industries
Quality Assurance Representative: _____


Wm. Dent

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**MACFASTENERS, INC.**

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

Packing List

Bill M & M Aerospace Hardware

To: PO Box 025263

Miami, FL 33102-526

United States

Ship M & M Aerospace Hardware

To: 9835 NW 14th Street

Miami, FL 33172

United States

Shipment No: 46615

Shipment Date: 10/25/10

Ship Via: United Parcel Service

Order Number: 36139

Order Date: 06/09/08

Customer Code: M & M

Phone: (305) 925-2600

PO Number: OFJ925

Terms: Net 30 Days

LOT #45252

<u>Item</u>	<u>Quantity</u>					<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>					
1	10,000	12,000	0	0	M	MS27039C4-08 Screw machine pan head structural cross recessed A286 material	3	45252	

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OFJ925

PART NUMBER: MS27039C4-08

REV: 3

LOT NUMBER: 45252

MANUFACTURED QUANTITY: 12,000

MILL HEAT NUMBER: 74FB

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225-7014, ALTERNATE 1 COMPLIANT

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain and have not come in contact with Mercury or Mercury compounds.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in conformance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 10/25/10



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100/ISO9001 Registered Company - PJR# C2009-00297

CHEMICAL & PHYSICAL TEST REPORT

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE A286				AMS5731/AMS5737				74FB			BRWN PAC		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.028	.16	.28	.015	.0003	.09	24.41	14.2	1.11	.18	.007	56.94	.22	2.16
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
	.12												

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	24 HRC REF MIN
SAMPLE SIZE	8
ACTUAL RESULTS	
33-36 RC REF	

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input checked="" type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

Quality Assurance Representative
AS9100, ISO9001 REGISTERED
PJR #C2009-00297

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 10/25/10

PO NUMBER: OFJ925

MANUFACTURED QUANTITY: 12,000

LOT NUMBER: 45252

MATERIAL: TYPE A286

PART NUMBER: MS27039C4-08

REVISION: 3

REQUIRED HARDNESS: 24 HRC REF MIN

SAMPLE SIZE: 8

HARDNESS: 33-36 RC REF

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE



BROWN-PACIFIC, INCORPORATED
 13639 BORA DR. / SANTA FE SPRINGS / CALIFORNIA 90670
 (562) 921-3471 • (562) 921-7012 FAX

MATERIAL TEST REPORT

F.O.B. SFS		SHIP VIA TDLogistics		JOB NO.		INVOICE NO. -0- 74622	
SHIP TO	MACFASTENERS, INC. 1110 ENTERPRISE STREET OTTAWA, KS 66067			ORDER DATE 06/14/10		THIS MATERIAL WAS MANUFACTURED AND TESTED IN CONFORMANCE WITH THE NOTED SPECIFICATIONS. THE INFORMATION PRESENTED HEREIN IS CORRECT AS CONTAINED IN THE COMPANY RECORDS. BY: <i>G. Moreno</i> G. MORENO, LAB	
				CUST. P.O. NO. 51840			
				DUE DATE 07/16/10			
SOLD TO	MACFASTENERS, INC. 1110 ENTERPRISE STREET OTTAWA, KS 66067			6 COILS 2832#		7/30/2010 GM	
PRODUCT ORDERED				QTY. ORDERED			
0.406 DIA TYPE A-286 CONVERTED TO 0.224/0.225 DIA SEAMSAFE MIRAFLEX COATED COIL				2500		KNOWINGLY OR WILLFULLY RECORDING FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL LAW, TITLE 18, CHAPTER 47.	

SPECIFICATIONS
 CAP OF AMS 5853C 5731L 5737P

GRADE A-286	MILL NO. 18	HEAT NO. 74FB
----------------	----------------	------------------

CHEMICAL ANALYSIS

C: .028 AL: .22
 MN: .28 TI: 2.16
 P: .015 B: .007
 S: <.0003 CB:
 SI: .16 TA:
 NI: 24.41 CB+TA:
 CR: 14.20 CU: .09
 MO: 1.11 SE:
 CO: .12 N:
 V: .18 FE: 56.94
 CA: PB: <.0001
 MG: BI: <.00001
 ZR<.01

ASTM GRAIN SIZE: 6/7

ALLVAC, USA

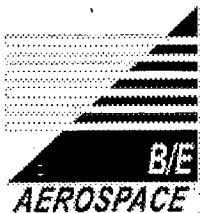
MACRO:

MICRO:

OTHER:

MECHANICAL PROPERTIES AND CAPABILITY

MECHANICAL PROPERTIES AND CAPABILITY					
AS SHIPPED PROPERTIES	TENSILE, KSI	106.2	YIELD, KSI		% ELON
	% RA		HARDNESS		SHEAR, KSI
ETT °F	TENSILE, KSI		YIELD, KSI	% ELON	% R.A.
STRESS RUPTURE	TEMP °F 1200F	STRESS, KSI 65	HOURS 48.4	% ELON 23.0	
	TEMP °F 1200F	STRESS, KSI 70	HOURS 48.3	% ELON 23.0	
H.T. PROCEDURE					
1650F 2HRS W/Q, 1325F 16HRS A/C					
	TENSILE, KSI	166.3	YIELD, KSI 111.4	% ELON 28.0	
	% R.A.	52.7	HARDNESS RC 33	SHEAR, KSI	
H.T. PROCEDURE					
1800F 1HR W/Q, 1325F 16HRS A/C					
	TENSILE, KSI	166.6	YIELD, KSI 111.7	% ELON 28.0	
	% R.A.	54.0	HARDNESS RC 34	SHEAR, KSI	
H.T. PROCEDURE					
1250F 8HRS A/C					
	TENSILE, KSI	166.5	YIELD, KSI 122.4	% ELON 26.0	
	% R.A.	60.1	HARDNESS RC 30	SHEAR, KSI	



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
44	100	EA	MS21044N08		39995-000	MACLEAN-ESNA	019L2		


Jason Lewis
Vice President of Quality

03/06/14

51331

MACLEAN-ESNA
PICK IN PACKING LIST

Ship From: MacLean ESNA
611 Country Club Road
Pocahontas, AR 72455

Col/Ppd: 01 COLLECT
Routing: 01 Not on file

Sold to: 552550
BE AEROSPACE INC
PO BOX 025263
MIAMI, FL 33102-5263

Ship To: 552550-0000
M&M AEROSPACE HARDWARE
10000 N.W. 15 TERRACE
MIAMI, FL 33172

Customer P.O.: OHJ057

Order No: 055028-00 B4: 05
Tkn By: SEH Chgd By: SEH

Ord. Qty.	Item Number	LOCN							
No. Ctns	Description	TAG				Qty.	No. of	Net	
Ship Qty.		HT/LOT	QOH	Picked	Cartons	Weight			
500000	175746	0010 04/01/10	✓A50A	15096	15096	2	59*		
500,000	50 F22NM-82		0						
	MS21044N08		1770-000						
CTN QTY: 10000 Cus Pt: MS21044N08									
			✓C31A	9925	9925	1	39*		
			11765						
			1770-000						
			✓M36B	9950	9950	1	39*		
			11548						
			38489-000						
			✓B35A	225000	225000	23	900*		
			11204						
			39810-000						
			✓B36A	202537	202537	24	811*		
			11205						
			39810-000						
			✓C30B	37492	37492	4	152*		
			11210						
			39995-000						

* CERTS REQUIRED *

REL NBR V-099325

Order Total:

2 SKIDS 2065*
52 Bxs

***** ORDER COMMENTS *****

QTY TOLERANCE +/-2%
UNDER 150# FEDEX GROUND 0331-0149-0 MARK COLLECT
OVER 150# FEDEX NATIONAL LTL 018757
DO NOT INSURE
F.O.B. POCAHONTAS, AR
ALL ITEMS MUST BE NEW AND TO LATEST
REVISION

*** Continued On The Next Page ***

105096
1010000
109925

109950

105000
22010000

102537
20010000

107492
3010000

3/22/10
B

MACLEAN-ESNA
PICKING / PACKING LIST

Ship To: MacLean ESNA
111 Country Club Road
Pocahontas, AR 72455

Col/Fpd: 01 COLLECT
Routing: 01 Not on file

Sold to: 552550
3610000 BE AEROSPACE INC
10 JHJ5 PO BOX 025263
MIAMI, FL 33102-5263

Ship To: 552550-0000
M&M AEROSPACE HARDWARE
10000 N.W. 15 TERRACE
MIAMI, FL 33172

30610000
10 JHJ5 P.O. OHJ057

Order No: 055028-00 B/O: 05
Tkn By: SEH Chgd By: SEH

Ord. Qty.	Item Number	LOCN	Qty.	No. of	Net
Line	Description	TAG	Picked	Cart	Weight
10 JHJ5		HT/LOT			

10 JHJ5

25 BX2
12K/2 1002

10 JHJ5

10 JHJ5

10 JHJ5

200' 000

2/331

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY
611 COUNTRY CLUB ROAD
POCAHONTAS, ARKANSAS 72455
(870) 892-5201

TO: M&M AEROSPACE HARDWARE
10000 N.W. 15 TERRACE
MIAMI, FL 33172

DATE: 3/23/2010

SUBJECT:	YOUR ORDER NUMBER	OHJ057	ITEM NUMBER	1
	ESNA ORDER NUMBER	055028		
	FSCM/ CAGE NUMBER	019L2		
	YOUR PART NUMBER	MS21044N08		
	CERTIFIED AS	MS21044N08 PER NASM21044 (NEW)		
	ESNA PART NUMBER	F22NM-82		
	QUANTITY	37492		
	PACKING LIST NUMBER	51331		
	SHOP ORDER NUMBER	39995 - 000		

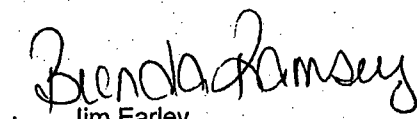
Gentlemen:

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

Very truly yours,

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY


Jim Earley
Quality Assurance Manager

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 3/23/2010

TO: M&M AEROSPACE HARDWARE
10000 N.W. 15 TERRACE
MIAMI, FL 33172

ESNA PART NO. F22NM-82
MANUFACTURER'S LOT SIZE 77064 (APPROX. WT. COUNT)
MANUFACTURED UNDER SHOP ORDER NUMBER 39995 - 000
ORIGINATED AS SHOP ORDER NUMBER

ACCEPTANCE TESTS PER NASM 25027

MATERIAL RAW MATERIAL TYPE 0.310 RD 1010 CHQ WIRE DATE MFG: 08-08
RAW MATERIAL CONFORMS TO ASTM A-510 AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP
ORDER NO. 39995 - 000 MILL HEAT NO. 527730 VENDOR WIRE TECH
RED NYLON IS A TRADEMARK OF ELASTIC STOP NUT. THIS ASSURES TRACEABILITY OF PARTS TO SOURCE. MATERIAL
CERTIFICATION WITH HEAT NUMBERS ASSURES TRACEABILITY TO VENDOR OF RAW MATERIAL. NONMETALLIC INSERT
CONFORMS TO ASTM D4066-00. (ZYTEL 103)

FINISH FINISH TYPE CADMIUM PLATED TO SAE AMS QQ-P-416B, TY II, CL 2
LUBRICANT TYPE NO ADDITIONAL LUBRICANT

AXIAL STRENGTH REQUIRED LBS. MINIMUM 1720 ALL SAMPLE PIECES TESTED MEET OR EXCEED
EXCEEDS LBS. 2100 MINIMUM REQUIREMENTS.
SAMPLE SIZE 15 PIECES.

WORKMANSHIP CONFORMS DIMENSIONALLY TO MS21044N08 PER NASM21044 (NEW)
STANDARD. BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM 25027

DISCONTINUITIES

WITHIN LIMITS PER NASM 25027 AND MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

ASTM E1444 -- MT PER SPEC 725	SAMPLE SIZE(MT - PCS):	0
	ACCEPTED(PCS):	N/A
ASTM E1417 -- PT PER SPEC 731	SAMPLE SIZE(PT - PCS):	0
	ACCEPTED(PCS):	N/A

LOCKING TORQUE MAXIMUM LOCKING(IN. LBS.): 15
MINIMUM BREAKAWAY(IN. LBS.): 1.5
1ST CYCLE MAXIMUM LOCKING(IN. LBS.): 3.5
7TH CYCLE MAXIMUM LOCKING(IN. LBS.): 3.9
15TH CYCLE MAXIMUM LOCKING(IN. LBS.): 3.5
15TH MINIMUM BREAKAWAY(IN. LBS.): 2.1
ALL SAMPLE PIECES MEET
OR EXCEED MINIMUM REQTS.
SAMPLE SIZE 15 PIECES

MERCURY FREE CLAUSE

WE CERTIFY THAT NO POSSIBILITY EXISTS FOR MERCURY CONTAMINATION TO OCCUR
DURING MANUFACTURE, ASSEMBLY, OR TESTING OF PARTS ON THIS CONTRACT.

I CERTIFY THAT THE ABOVE TEST RESULTS AND/OR STATEMENTS ARE CORRECT AND REPRESENT THE PRODUCTS AS SUPPLIED.

FSCM/CAGE NO. 019L2
COQC-NASM REV. 7-9-09

SIGNATURE

JIM EARLEY, QUALITY ASSURANCE MANAGER

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY
POCAHONTAS, ARKANSAS 72455

LOCKING TORQUE TEST

CUSTOMER NAME M&M AEROSPACE HARDWARE
10000 N.W. 15 TERRACE
MIAMI, FL 33172

CUSTOMER DUE DATE

3/23/2010

CUSTOMER PO # OHJ057
ITEM NUMBER 175746
QUANTITY 37492
THREAD SIZE .1640-32UNJC-3B
HEX .336 - .345
LINE NO 1
MS NUMBER - REF: MS21044N08 PER NASM21044 (NEW)

ESNA ORDER # 055028
PART # F22NM-82
SHOP ORDER # 39995 - 000
LOT QUANTITY 77064
PARENT SHOP ORDER #

Sample Size & Requirements per Spec NASM 25027

SampleSz 15

REQUIREMENT: 1ST, 7TH, 15TH, INSTALLATION MAXIMUM TORQUE

15

15TH BREAKAWAY MINIMUM TORQUE

1.5

SAMPLE #	1ST ON	1ST BREAK	7TH ON	7TH BREAK	15TH ON	15TH BREAK
1	3.5	4.0	3.9	3.5	3.5	3.5
2	3.0	3.4	2.5	3.0	3.3	3.1
3	3.0	3.1	2.4	2.5	2.0	2.5
4	3.0	3.0	3.0	2.7	2.5	2.9
5	2.9	3.0	2.4	2.5	2.4	2.4
6	3.1	3.3	2.4	3.0	2.8	2.6
7	3.0	3.0	2.3	2.6	2.0	2.1
8	3.1	3.1	2.9	3.0	2.6	2.7
9	2.3	2.5	2.6	3.0	2.9	3.0
10	2.4	2.3	2.7	2.5	2.0	2.1
11	2.5	2.5	2.8	3.0	2.2	2.5
12	3.0	3.4	2.1	2.3	2.6	3.5
13	2.9	3.0	3.1	3.0	2.4	2.4
14	3.0	2.8	3.0	3.2	3.0	3.0
15	3.1	3.0	2.5	3.0	2.6	2.7

SIGNATURE

Brenda Ramsey
JIM EARLEY, QUALITY ASSURANCE MANAGER



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

Maclean - ESNA
611 Country Club Road
Pocahontas, AR 72455
USA



RMIR 260383
PO 16451
310 RD 1010

WORK ORDER
059945

CERTIFICATION

HEAT NO.
527730
SALES ORDER / RLS
824891 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CUSTOMER P.O. 16451	CUSTOMER PART 0400070310	QUANTITY 1,106 Lbs	CARRIERS 1	LADING NO 00073558	SHIPMENT DATE 08/22/2008
SPECIFICATION M051010-303100B C-1010, AKFG, CHQ WIRE, SAIP Zinc Phosphate and Lube Coating, Size:0.309/0.311 Specifications: 1040 B , ASTM A-29/A29M 05 , ASTM A-510 REV. 06					
CERTIFICATION REQUIREMENTS					
Chemical Properties					
C 0.09	Mn 0.37	P 0.008	S 0.012	Si 0.080	Cu 0.08
				Ni 0.04	Cr 0.07
					Mo 0.02
Physical Properties					
Mill Source Charter					
Mechanical Properties					
TEST Tensile Strength	UNITS KSI	Results 61.2			

39995-000

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. *The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.*

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, Inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.
"LATEST REVISIONS OF ASTM"

Material is free of mercury, radium, or alpha contamination.

FEB-25-2008 MON 04:40 PM

CHARTER ROLLING Q/C DEPT

+1 262 268 2554

P. 12

FAX



CHARTER STEEL

CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

A Division of
Charter Manufacturing Company, Inc.

1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

Wiretech Incorporated
8440 East Canning Street
Los Angeles, CA 90040-
Attn: Janice Duran

Order No.	6175-3
Customer	1010-3C110-C
Charter Sales Order	259289
Heat #	527730
Ship Lot #	388319
Grade	1010 A AK FG RHQ
Process	HR
Finish Size	7/16

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies those requirements.

Lab Code: 7388
Chemistry
Wt%

C	MN	P	S	SI	NI	CR	MO	CU	SN	V
0.09	0.37	0.008	0.012	0.080	0.04	0.07	0.02	0.08	0.005	0.001
AL	N	B	TI	NB						
0.034	0.0060	0.0001	0.001	0.001						

Test Results of Heat Lot# 527730

CHEM. DEVIATION EXT.-GREEN = N/R

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE (KSI)	3	56.8	57.8	57.4	TENSILE LAB = 0358-02
REDUCTION OF AREA (%)	3	58	69	64	RA LAB = 0358-02
ROCKWELL B (HRBW)	3	63	66	64	RB LAB = 0358-02
ROCKWELL C (HRC)	0	0	0	0	RC LAB = N/R
ROD SIZE (Inches)	20	0.433	0.444	0.439	
ROD OUT OF ROUND (Inches)	6	0.003	0.007	0.005	

QC DEVIATION EXT.-GREEN = N/R

Test Results of Processing Lot

QC DEVIATION EXT.-PROCESSED = N/R

Specifications:

Manufactured per Charter Steel Quality Manual Rev 8, 12-05-07
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3000 Revision = Q Dated = 16-JAN-2007

Additional Comments:

39995-000

Amira 26383
DO 16451
310 RD 1010



Charter Steel
Saukville, WI, USA



Fax number: (323) 728-8360

Rem: Load 1, Mail 0, Fax 1 Page 1 of 1
Testing Laboratory

Tim Leahy
Manager of Quality Assurance
02/22/2008

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSMD	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSRDP/CDPD	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	P4	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSC	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
358.05	128003	CSDT	Charter Steel Detroit	23860 Sherwood Ave. Center Line, MI 48015
*	*	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSMD, CSC	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSC	ASTM E572
Macroetch	CSMD, CSC	ASTM E381
Hardenability (Jominy)	CSMD, CSC	ASTM A255; SAE J406; JIS G0561
Grain Size	CSMD	ASTM E112
Tensile Test	CSRDP/CSPD, P4, CSC, CSDT	ASTM E8; ASTM A370
Rockwell Hardness	CSMD, CSRDP/CSPD, P4, CSC, CSDT	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSRDP/CSPD, P4	ASTM A892
Inclusion Content (Methods A, E)	CSRDP/CSPD, CSC	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/09.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Purchase Order number) to the customer's purchase order. Both Purchase Order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

39995-000



ESNA
9
RECEIPT



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
16	250	EA	AN3-3A		22980	AIRFASCO INDUSTRIES	3Z958		


Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14

Airfasco Industries, Inc.

2655 Harrison Ave SW
Canton, OH 44706
Ph: 330-430-6190, Fax: 330-430-6199,

Packing Slip Original**Invoice #: 136234**

Invoice Date: 7/19/2013

Time: 11:38:58 AM

Page: 1

To:

B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102
USA
Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

Ship To:

B/E AEROSPACE
CONSUMABLES MANAGEMENT
9835 NW 14TH STREET
MIAMI, FL 33172

Cust. PO#: 0REH64

Order Date: 7/16/2013

Prepared By:

Customer #: 12726

Buyer:

WO #:

Terms: CREDIT CARD

of Items: 1

Sales Order: 111856

VAT #:

FOB:

Ship Via: FEDEX GROUND COShip Via Acc: 0331-0149-0

of Boxes: 35

Ship Log #: 1

Cust VAT #:

AWB:

Weight: 1748

Ship Order:

Ship Date: 7/19/2013

Shipment:

Item	Part Number/Description	Shipped	BackOrd	CD	List Price	Disc	Unit Price	UOM	Total Amt
1	AN3-3A BOLT, AN Loc/Whse: 1B8 Loc/Whse: 1D8 Control #: 151102-1 L-22769 54,595 PCS TEST REPORT L-22980 186,080 PCS TEST REPORT TEST REPORT & DFAR	240675	259325	NE				EA	

C OF C ENCLOSED

2 PALLETS 35 BOXES 409/1339 LBS

PARTS MADE IN THE U.S.A.

THANK YOU!

Special Instructions:

Authorized Signature:



**2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199**

CERTIFICATE OF CONFORMANCE

BE AEROSPACE

I Hereby Certify that on 7/17/13 Airfasco Industries provided the supplies called for by Contract/ PO Number **0REH64** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States. DFAR 252.225-7009 compliant in fastener base raw material melt source only, with heat number and country, does not include the post cadmium metal plating.


WM. DENT

Quality Assurance Representative

[illegible]



AIRFASCO

INDUSTRIES

MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 07/17/13

PART NO.: AN3-3A per NASM3-3A rev. 2

AFC LOT NO.: 22980

QTY MFG.: 188,000

PROCUREMENT SPECIFICATION: Produced per NASM 6812

HEAT TREAT

VENDOR: Brite Metal

CERTIFICATION NO.: 163973

PROCUREMENT SPECIFICATION: Heat Treat per AMS-H-6875 B

PLATING

VENDOR: Beringer Plate

CERTIFICATION NO.: 75042

PROCUREMENT SPECIFICATION: Cadmium Plate per AMS-QQ-P-416 C, Type II, Class 2

MATERIAL

MILL: Solon Wire

COUNTRY OF MELT: USA

HEAT: 5170531

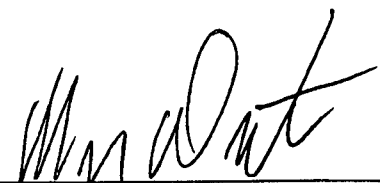
GRADE SPECIFICATION: Alloy Steel per AMS 6300E, Type 4037 .218"

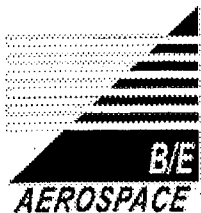
4037 MATERIAL CHEMISTRY											
ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	-AL-	Other
LADLE	.370	.850	.007	.003	.200	.060	.070	.230	.070	.033	

PHYSICAL PROPERTIES				
PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	2,210 lbs.	1,690 lbs.	2,125 lbs.	HRC 26-32
ACTUAL	3,219 lbs.	2,623 lbs.	2,391 lbs.	HRC 31-32

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

Airfasco Industries
Quality Assurance Representative:


Wm. Dent



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR	DATE	EXP	DATE
30	5	EA	AN833-6D		P00028223-29882-1	NELSON AEROSPCE/PERM	52930				



Jason Lewis
Vice President of Quality

03/06/14

PERMASWAGE

PERMASWAGE - Nelson Aerospace
A Designed Metal Connections, Inc. Company
10310 Norris Avenue
Pacoima, CA 91331
Ph: 818-686-0900
Fax: 818-686-0181

Pack Slip: 48839

Sales Order: 19844

Page: 1 of 1

Customer Packing Slip

Ship To:

B/E AEROSPACE CONSUMABLES MANAGEM
9835 NW 14TH ST
MIAMI FL 33172
USA

Verify AES requirements prior to shipment.

Sold To:

B/E AEROSPACE CONSUMABLES MANAG
PO BOX 025263
MIAMI FL 33102-5263
USA

Verify AES requirements prior to shipment.

Fax: 305-507-7194

Ship Date: 8/30/2013

Ship Via: FEDEX GROUND

F.O.B.: EX WORKS

Cust P.O.: OFSW39

Salesperson: JIM THOMPSON

PO Line	Planned Qty	Shipped Qty	Part Number Description	Rev	Lot Number
FEDEX GRD # 0331-0149-0					
	2,400	1,138	AN833-6D ELBOW	8	F00028223-29882-1
Sale Order / Line / Release: 19844 / 3 / 1			Customer PO Number: OFSW39		

Certificates Required:

Standard Certification:	No	First Article Inspection:	No	Material Certificate:	No
Full Certifications:	Yes	Chemical/Physical:	No	FAIR per AS9102:	No

1 BOX 7 LBS 10X8X6
2 BOXES 25 LBS 12X12X12

AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00

Products listed have not been exposed to mercury or mercury compounds during the manufacturing process.

!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE -NELSON AEROSPACE SALES @ 818-686-0900 !!

WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STANDARDS ACT ON 6/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM).

Certification of Conformance

NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABILITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABILITY IS BASED UPON CONTRACT RIGHTS, NEGLIGENCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECEIPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH

Manager of Quality Assurance or Designee



JENCO PLATING INC

9536 Rush Street
South El Monte

CA 91733

TEL: (626)443-6705

FAX: (626)443-5133

SHIPPER/C of C



INVOICE

SHIPPER NO.

57427

Bill
To:

NELSON AEROSPACE
10310 NORRIS AVE.

Ship
To:

10310 NORRIS AVE.

PACOIMA

CA 91331

PACOIMA

CA 91331

DATE SHIPPED	SHIPPED VIA	TERMS	JOB NO.	PURCHASE ORDER NO.
8/30/2013			F00028223	32163

ITEM	QTY ORDERED	PART NUMBER / DESCRIPTION	REVISION	QTY SHIPPED
1	2,958	AN833-6D ELBOW LOT NO: F00028223-29882-1		2,958

ANODIZE PER MIL-A-8625F, AMEND 1, TYPE II
CLASS 2 COLOR BLUE WITH DUPLEX SEAL

DURABILITY FINISH INSPECTION ACCORDANCE
PER AS4841 PARA 4.7.1. 18 PCS



This is to Certify, All goods delivered
do not come in direct contact with mercury
mercury compounds or with any mercury
containing device in our facility.

WE CERTIFY THAT, EXCEPT AS OTHERWISE STATED, THE LISTED PARTS HAVE BEEN PROCESSED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NOTED PURCHASE ORDER/SPECIFICATION(S). RECORDS ARE ON FILE AND AVAILABLE FOR EXAMINATION.

BY:

QUALITY CONTROL
MANAGER

PERMASWAGE

CERTIFICATION OF CONFORMANCE

14800 South Figueroa St. Gardena, Ca. 90248-1795
Telephone: (310) 323-6200, Facsimile: (310) 329-2505

Jun/21/2013

Customer: Nelson Aerospace

Designed Metal Connections Inc., dba Permaswage USA, certifies that documentary evidence in the form of physical and chemical test reports and inspection records on this material and/or processes indicating conformance to the applicable specifications are on file and available for review at the seller's plant.

The parts so submitted meet dimensional, functional and quality requirements as covered on the purchase order number, part number and/or specifications.

The following information pertains to this purchase order:

29882



Item Number:

833-06DF



Lot Number:

/ 343937



Ref. Customer Part Number:

Ref. Customer Part Number Rev.:

Quantity:

2,972.00



Order Number:

264602



Line Number:

001



Pick Slip Number:

209990



RMLC: 13D3660-013

/HEAT: 10040734



Signature: _____

User Name: **SARKISIAN, VAHE**

Title: **Quality Assurance Representative**

EXOVA

10005 Freeman Avenue, Santa Fe Springs, CA. 90670
Tel: (562) 946-1721 Fax: (562) 944-8389 www.exova.com

Exova

Customer: PERMASWAGE
14800 South Figueroa Street
Gardena, CA 90248

PO/BO: 23510/CONTROL# 36678

Lab No: 590597

Date: 06/20/13

Material: 2014-T6
Specification: AMS-QQ-A-367, Rev: D
AMS 41338

P/N: 833-06DP
Size: 0.560" DIA

Heat Number: 10040734
Other: FORGING

ENCL: 13D2660-013, W/O: 343937

CERTIFICATION OF TEST											
METALLURGY	TENSILE TEST	TEMP°F	STRESSED	STRESSED	TYS @ 0.2% OFF		TENSILE STRENGTH		ELONG (4D)		RED. OF AREA
	LOC/ORIENTATION		DIM	AREA	LBS	KSI	LBS	KSI	IN	%	FIN. DIM. %
	CTR LONG Loc: T6 Min. Requirements	RT	.1610 D	.0204	1291	63.3	1448	71.0	0.075	11.7	
						56.0		65.0	.6400	6	
	<div>6/22/2013, 5:35 AM PERMASWAGE cd Bump</div>										

Conforms to requirements.

MEM PAGE: 1 of 1

EXOVA submits this certification as the confidential property of our client. It shall not be reproduced except in full, without the written approval of EXOVA. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal law.



Signed for and on behalf of Exova

David Tallini

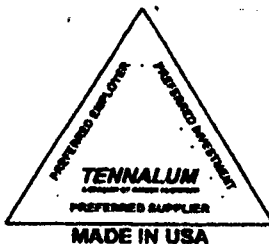
David Tallini, Quality Manager
EXOVA



KAISER ALUMINUM

FABRICATED PRODUCTS

Tennalum
309 Industrial Drive
Jackson, TN 38301
731-423-2811



CERTIFIED TEST REPORT
<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER: 43-107961-2		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION: Forging Stock HA Round	
KAISER ORDER NUMBER: 686158	LINE ITEM: 2	SHIP DATE: 03/01/2013	ALLOY: 2014 ✓	TEMPER: F ✓	
WEIGHT SHIPPED: 1043 lbs.	QUANTITY: 136 pcs.	B/L NUMBER: 35067	DIAM/DAF/THICKS: 0.8125 in.	WIDTH: 0.000 in.	LENGTH: 144.0 in.
SHIP TO: Braico Metals 15090 Northam Street La Mirada, CA 90638 USA			SOLD TO: Braico Metals 15090 Northam Street La Mirada, CA 90638 USA		

Test Code: 4000 AC

Actual Physical Properties

Lot Number	LONG.
	NO
	TEST
10040734 ✓	0.0

Chemical Composition, WT. % (Aluminum Remainder)

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	OTHERS EACH	OTHERS TOTAL	Lot
Actual	0.93	0.3	4.8	1.02	0.61	0.06	0.18	0.02			10040734
Max	1.2	0.7	5.0	1.2	0.8	0.10	0.25	0.15	0.05	0.15	
Min	0.50		3.9	0.40	0.20						

Specifications

Standard: ASTM B247-09 TABLE 1, AMS-QQ-A-367 CHEM ONLY



D.M.C. RAW MATERIAL LOT
CONTROL# 13D3660-03

5-28-13

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ("Kaiser") hereby certifies that the metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

John Rennekamp, Quality Manager

John Rennekamp

Plant Serial: 184693

Kaiser Order Number: 686158

Line Item: 2

Page 1 of 2

Sold to: DMC PO: 64759 Part: 13D3660-013 Order No.: 363913

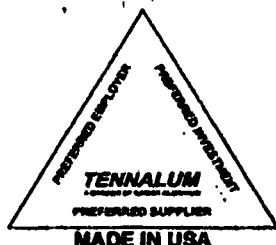
TR clerk signature: _____

Samuel Montoya

KAISER ALUMINUM

FABRICATED PRODUCTS

Tennalum
309 Industrial Drive
Jackson, TN 38301
731-423-2811



CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

Miscellaneous Notes

Made in USA

This material was melted and manufactured in the USA. Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. AS9100C:2009 The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

Wrought forging stock is produced to a controlled chemical composition, metal cleanliness level and dissolved gas level. Accordingly, the quality of Kaiser Aluminum Class I and II forging stock is such that properly forged and heat-treated, forgings produced from it can be expected to conform to the applicable Aluminum Association ultrasonic standards at a high level of recovery. When forgings are ultrasonically inspected before being placed in service and ultrasonic indications caused by stock quality are found to exceed the applicable Aluminum Association ultrasonic standard or the quality level of a negotiated standard, Kaiser Aluminum will replace such stock. Kaiser Aluminum assumes no other responsibility for ultrasonic quality than that described above. This material meets the requirements of Bell Helicopter Spec. BPS 4017F-1, Section VI. Material is RoHS compliant.

NA
140

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ("Kaiser") hereby certifies that the metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

John Rennekamp, Quality Manager

John Rennekamp

Plant Serial: 184693

Kaiser Order Number: 686158

Line Item: 2

Page 2 of 2

Sold to: DMC PO: 64759 Part: 13D660-114 Order No.: 363913

TR clerk signature: _____



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
61	10	EA	NAS509-6C		5578	LONG LOK	03038		


Jason Lewis
Vice President of Quality

03/06/14



Packing Slip

Long-Lok Fasteners Corp.
20531 Belshaw Ave.
Carson, CA 90746-3505
Tel: 310-601-4637
Fax: 310-632-1415

Ship To

B/E AEROSPACE, INC. CONSUMA...
9835 NW 14th ST
MIAMI FL 33172
United States

Bill To

B/E AEROSPACE, INC.
CONSUMABLES MANAGEMENT
P.O. BOX 025263
MIAMI FL 33102-5263
United States

Packing Slip # BR3522-35475

Supplier #

Order Date

3/29/2013

Sales Order #

BR3522

Ship Date

11/1/2013

Tracking #

Ship Via

MANUAL FEDEX GRO...

PO #

ONLH49

Terms

Net 60

Item	Description	Ordered	Units	Back Ordered	Shipped	Latest Rev...
---NAS509-6C REV. 7	NAS509-6C REV. 7 SHIP DATE 12/23/13	5,000		2,700	2,300	

This sale is subject to our standard terms and conditions, which are published at <http://www.longlok.com/terms.htm>

CERTIFICATE OF CONFORMANCE. Long-Lok Fasteners Corporation certifies that the material furnished in this shipment was made in accordance with applicable specifications. In making this certification, we have relied on certificates of conformance from our suppliers.



☒ Bemis Screw Products
20531 S. Belshaw Ave.
Carson, California 90746
Phone: (818) 767-1535
Fax: (818) 767-0439

☐ 10830 Chester Rd.
Cincinnati, Ohio 45215
Phone: (513) 772-1880
Fax: (513) 772-1888

☐ 20501 S. Belshaw Ave.
Carson, California 90746
Phone: (424) 213-4570
Fax: (424) 213-4584

☐ A&W Screw Machine
20531 S. Belshaw Ave.
Carson, California 90746
Phone: (818) 767-1535
Fax: (818) 767-0439

CERTIFICATE OF CONFORMANCE

Purchase Order No.: ONLH49 Long-Lok S/O (Job) No.: BR3522

Customer: B/E AEROSPACE, INC. Part No.: NAS509-6C REV. 7

Long-Lok Part Number: N/A

Part Description: NUT

DPAS Rating: N/A Contract Number: N/A

Line Item (per P.O) #: 001 Lot #: 5578

Site Specific Code #: 40630 Heat #: 970245

Purchase: L.T.A # N/A

☒ Material purchased for this order is in compliance with DFAR 252.225-7009, 7014 as per the applicable purchase order. ☐ DFAR's Material Not Applicable

Process: ☐ Long-Lok Strip (Nylon: Type 'L') ☐ Dri Loc Type of Material

☐ Long-Lok Strip (Kel-F: Type 'L') ☐ Dyna Thred

☐ Poly-Lok Patch (Type 'P') ☐ Omni-Lok

☒ Non-Locking ☐ T-Sert

☐ Other (Pellet: Type 'N') ☐ Hot Lok

Basic Part: ☐ Customer Furnished ☒ Complete

Quality System Per: ISO 9001:2008; AS 9100 as revised

Drawing and/or Specification Revision: Type

☐ MIL-DTL-18240 Rev. F, (Amd. 1) ☐ L ☐ P ☐ N

☐ MIL-F-18240 Rev. E ☐ L ☐ P ☐ N

☐ MIL-F-18240 Rev. D, (Amd. 1) ☐ L ☐ P ☐ N

☐ NAS 1283: ☐ L ☐ P

☐ NASM 25027 Rev.: ☐

☐ IFI: ☐ 124 ☐ 125 ☐ 524 ☐ 525

☐ MIL-F-8961: ☐

☒ Print #: NAS509 Rev.: 7

☐ Other:

Sampling Plan:

☐ Long-Lok Sample Plan ☐ SPOC 128
(MIL-DTL-18240)

☒ ANSI/ASQC Z1.4-1993 ☒ 1.0 AQL Lvl I

☐ 100% Inspected ☐ 0.65 AQL Lvl II

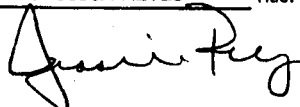
☐ Other ☐ 0.40 AQL Lvl III

Quantity: 2,300 Quantity Inspected: 50

The material comprising this purchase order has been subjected to, and passed, all examinations and test required by the contract, and the material meets the drawing specification and/or other requirements specifically stated in the purchase order. Test reports covering this material are on file subject to examination. All parts are processed "Mercury Free".

Manufacturing Country of Origin: USA

Name: JESSICA REYES Title: QUALITY ASSURANCE SUPERVISOR Date: 10/31/2013

 10/31/13



RICHBURG, SC

CERTIFICATE OF CONFORMANCE

Customer: LONG-LOK FASTENERS CORP.

Date: 06/17/2013

PAGE 1 of 1

Customer PO# BR5970

RA #: R02842

We certify that the material supplied by Rolled Alloys on the above referenced purchase order was processed in accordance with the quality assurance program and procedures approved under our ISO 9001:2008/AS9100 Rev C Certificate. Our records indicate that the material(s) and test report(s) meet the requirements of the purchase order and applicable specifications. The material test reports comply with the requirements of EN 10204:2004 paragraph 4.1, for a Type 3.1 inspection certificate. The materials supplied with this order were produced without known contact to mercury.

Description

9/16" HEX BAR A286 AMS 5737

35 PC X 144"

Heat - Tracer#

970245 - 288381




Adam Schwartz, RA Quality Assurance

High quality standards are supported by our ISO 9001:2008/AS9100 Rev C Certification

CERTIFICATE OF TESTS
CERT SERIAL# 000873042

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

05/02/13

CUSTOMER/BESTELLER/CLIENT

ROLLED ALLOYS

P O BOX 310
TEMPERANCE

MI 48182

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKÄUFER/VENDEUR PAGE 1 OF 3

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE		CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
R01086-003		W75434	05/02/13	1570.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

970245

UNS NUMBER S66286

PRODUCT DESCRIPTION: A286 SOLUTION ANNEALED AGED COLD DRAWN

SPECIFICATION: AMS 5737 REAFFIRMED REV P (07/ /12)
ASTM-A638-10 GRADE 660, TYPE 1
ASME-SA638 GRADE 660, TYPE 1 2010 EDITION
ASTM-A453-12 GRADE 660 CLASS A
ASME-SA453 GRADE 660 CLASS A 2010 EDITION
GE S-400 (10/15/12)
GE S-1000 (11/01/12)
EN 10204 (10/ /04)
DPAFS 1998 EDITION

HEAT# 970245
INRLER# 286381

SIZE 0.562500 IN. (14.29 MM) HEX BAR

PRIMARY HEAT CHEMISTRY (WT%) :

C	MN	SI	P	S	CR
0.03	0.19	0.01	0.016	LT .001	14.02
NI	MO	CU	CO	AL	TI
24.88	1.28	0.10	0.06	0.23	2.22
V	B				
0.25	0.006				

GEAG SUPPLIER CODE - 21100/CARPENTER
GEAG SUPPLIER CODE - T4314/LATROBE

INSPECTION CERTIFICATE 3.1 IN ACCORDANCE WITH EN 10204 AND DIN 50049

ENCLOSED MATERIAL WAS 100% ALLOY ID TESTED AT FINAL PACKAGING

MILL HEAT TREATMENT:

TYPE	SOLUTION ANNEAL	AGE
TEMP	1650F (899C)	1328F (720C)
TIME (BATCH FURNACE)	2.00 HOURS	16.00 HOURS
QUENCH	WATER	AIR

HARDNESS AS SHIPPED 320HBW (35HRC)

HOT REDUCTION RATIO 538 TO 1

CONTINUED ON NEXT PAGE

ROLLED ALLOYS QUALITY ASSURANCE
APPROVED *K. Taylor*
DATE 5-6-13

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keine Haftung für die angegebenen Daten oder Zertifizierungen.
Ce certificat est émis pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

CERTIFICATE OF TESTS
CERT SERIAL# 000873042

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTRÔLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

05/02/13

CUSTOMER/BESTELLER/CLIENT

ROLLED ALLOYS

P O BOX 310
TEMPERANCE

MI 48182

DUN

SELLER/VERKÄUFER/VENDEUR PAGE 2 OF 3

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
R01086-003	W75434	05/02/13	1570.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE :

970245

UNS NUMBER S66286

COMBINATION STRESS RUPTURE
TEST TEMP 1200 F (649 C)
STRESS, KSI (MPA) 65.0 (448)
ELONGATION % 25.3
HOURS 80.4

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS	STRESS KSI (MPA)
52	70.0 (483)
61	75.0 (517)
69	80.0 (552)
77	85.0 (586)

(T) RANSVERSE (L) ONGITUDINAL	L
YIELD STRENGTH, (0.20 %) KSI (MPA)	139.0 (958)
TENSILE STRENGTH, KSI (MPA)	175.0 (1207)
ELONGATION IN 2.00", %	20.0
REDUCTION OF AREA, %	43.0

GRAIN SIZE PER ASTM E112: 7 (KALLINGS)

COMBINATION STRESS RUPTURE
TEST TEMP 1200 F (649 C)
STRESS, KSI (MPA) 56.0 (386)
ELONGATION % 27.8
HOURS 143.6

AFTER MINIMUM TIME UNDER SPECIFIED STRESS, THE STRESS RUPTURE TEST
WAS OVERLOADED IN INCREMENTS AS FOLLOWS:

TOTAL HOURS	STRESS KSI (MPA)
101	61.0 (421)
109	66.0 (455)
117	71.0 (490)
125	76.0 (524)
133	81.0 (558)
141	86.0 (593)

MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIRE-
MENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1,
SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

CONTINUED ON NEXT PAGE

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CERTIFICATE OF TESTS
ABNAHMEPRUEFZEUGNIS
CERTIFICAT DE CONTROLE
CERT SERIAL# 000873042

CARPENTER

 Carpenter Technology Corporation
 101 West Bern Street, Reading, Pa. 19601
 Tel: (610) 208-2000 (800) 338-4592

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- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

05/02/13
CUSTOMER/BESTELLER/CLIENT
SELLER/VERKÄUFER/VENDEUR PAGE 3 OF 3
ROLLED ALLOYS
**P O BOX 310
TEMPERANCE**
MI 48182
DUN

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
R01086-003	W75434	05/02/13	1570.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:
970245
UNS NUMBER 866286
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

JASON M RAYMOND
ADMINISTRATOR - QUALITY
CARPENTER TECHNOLOGY CORPORATION

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
 Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die angegebenen Daten oder Zertifizierungen.
 Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



Element Materials Technology
15062 Bolsa Chica
Huntington Beach, CA
92649-1023 USA

P 714 892 1961
F 714 892 8159
T 888 786 7555
info.hb@element.com
element.com

Contact: BRIYAN ZAMBRANO
Long-Lok Fasteners
20531 Belshaw Ave.
CARSON, CA 90746-3505

TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 9/27/2013
Purchase Order Number: BR6452
Work Order Number: LON001-09-26-47354-1

Part No.:	NASS09-6C REV. 7
S/O:	BR3522
Lot#:	5538
Heat#:	970245
Specification:	NASS09-6C REV. 7, FF-N-836 REV.E
Material:	A286
Qty:	3200

MAGNETIC PERMEABILITY

Quantity Tested: 11

Testing was performed in accordance with MIL-I-17214 and ASTM A 342. The samples shall be less than 2.0 Mu for a field strength of H=200 oersteds.

Result: < 1.01 Mu

MATERIAL CONFORMS TO SPECIFICATION

This document contains technical data whose export and re-export/ retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval may be required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

Respectfully submitted

15062 Bolsa Chica, Huntington Beach, CA 92649
(714) 892-1961 ph • (714) 892-8159 fax www.element.com


Aja Moog
Quality Administrator

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punishable as a felony under federal law. All testing was performed in a mercury free environment. All testing performed in accordance with the latest edition of the applicable ASTM, or other Federal Test Method in effect at the time of test.





CERTIFICATION OF PROCESS

AEROSPACE QUALITY AC7004
CHEMICAL PROCESSING AC7108/AC7108-2
NON DESTRUCTIVE TESTING AC7114



9235 Glenoaks Blvd.
Sun Valley, CA 91352
FAA JU3R618L
CAGE CODE # 1F883
Ph 818-768-8655 Fax 818-504-6259

FORM # BG-QCM-280-1

CERTIFICATION # 365008

LONG LOCK BERNIC
20501 BELSHAW AVE

BG Detection certifies that the inspection(s) and processes listed were performed in accordance with the applicable specification(s) listed, were marked as acceptable, and were found to be air worthy with respect to the work performed. No class I ODS were used in processing these parts.

CARSON CA 90746
Phone 818-767-1535 FAX 818-767-0439
E-Mail jessica@longlok.com

DATE: 9/30/2013
P.O: BR6457

PART #: NAS509-6C

REV 7

NAME:

MATERIAL : A286

QTY: 3189

Order	PROCESS	ACCEPT	REJECT	SPECIFICATION	ACCEPTANCE SPEC				GRADE
1	PENETRANT	15	0	ASTM E1417/E1417M-13	MIL-STD-1907 "NOTICE 4"				A
				TYPE I 100% A LEVEL 3					
2	PASSIVATE	3189	0	AMS 2700 "E" Method 1	NOT APPLICABLE REFERENCE CERT #	367090 JReys 10/31/17			
		PASSIVATE TYPE	TYPE 2	TESTING	WATER IMMERSION**				
		TESTING SPEC	AMS 2700**	SAMPLING	NO. OF TEST 13				
	ETCH	PARTS NOT ETCHED							

CERTIFICATION NOTES

PENETRANT INSPECT SAMPLE QTY: 15 PCS
TEST PER CLASS I

FROM A LOT OF 3189
LOT# 5538
HT# 970245

DISCLAIMER

This is to certify that parts listed on your purchase order, have been processed in accordance with specification/s indicated. The certification represents our interpretation of the results obtained from the tests & is not to be construed as a guarantee or warranty of the condition of the materials tested. Parts, materials, etc. as processed by us shall be presumed to be accepted as satisfactory by you, if we are not notified of shortages or other discrepancies within ten (10) working days of your receipt. We certify that materials and equipment used in processing the above referenced parts were free of mercury contamination.

ACCEPTED SERIAL NUMBERS

REJECTED SERIAL NUMBERS

INSPECTED

BY:

Jaime Gonzalez

NDT LEVEL 2

APPROVED

BY:

Robert Greene

Quality Control

Robert Greene





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
27	750	EA	AN525-10R7		67219	MAC FASTENERS	ORPT4		


Jason Lewis
Vice President of Quality

03/06/14

MACFASTENERS, INC.

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

Packing List**Bill B/E AEROSPACE CONSUMABLES MGMT****To: 10000 NW 15TH TERRACE****MIAMI, FL 33172****Ship B/E AEROSPACE CONSUMABLES MGMT****To: 9835 NW 14th Street****Miami, FL 33172****United States****Shipment No: 59135****Shipment Date: 06/10/13****Ship Via: United Parcel Service****Order Number: 47280****Order Date: 01/29/13****Customer Code: BE AEROSPACE****Phone: (305) 925-2600****PO Number: OMPA58****Terms: Net 30 Days**

LOT #67219

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
4	100,000	120,000	0		M	AN525-10R7 Screw, washer head	67219

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: OMPA58

PART NUMBER: AN525-10R7

REV: 2

LOT NUMBER: 67219

MANUFACTURED QUANTITY: 120,000

MILL HEAT NUMBER: 541180

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 06/07/13


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

CHEMICAL & PHYSICAL TEST REPORT

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 4037				AMS6300				541180			WIRE TECH		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.38	.24	.76	.007	.007	.10	.05	.17	.22					
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	

ULTIMATE TENSILE STRENGTH POUNDS
TOO SHORT TO TEST PER NASM1312-8
MIN. REQ.

DOUBLE SHEAR STRENGTH POUNDS / PSI
TOO SHORT TO TEST PER NASM1312-13

MIN. REQ.

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	13
ACTUAL RESULTS	
26-27 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 06/07/13

PO NUMBER: 0MPA58

MANUFACTURED QUANTITY: 120,000

LOT NUMBER: 67219

MATERIAL: TYPE 4037

PART NUMBER: AN525-10R7

REVISION: 2

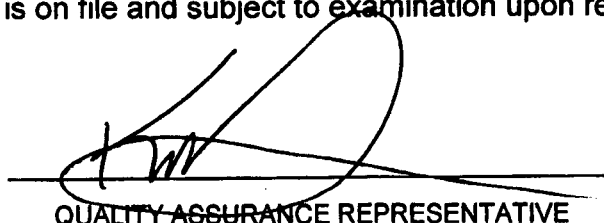
REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 13

HARDNESS: 26-27 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE



Packing List - Certificate of Conformance

Page 1 of 1
Date 2013-01-29
Ship-to customer number 512416
Sales order 450855
Your purchase order OLZS21

Certificate number 0017211196


HU number 57048480017211196

Bill to address
B/E AEROSPACE INC
Consumables Management
10000 NW 15TH TERRACE
MIAMI
FLORIDA 33172
USA

Ship to address
B/E AEROSPACE INC
Consumables Management
10000 NW 15TH TERRACE
MIAMI
FLORIDA 33172
USA

Item	Part number Customer part number	Batch number Manufacture batch no. PO number	Cure date Expiry date	Country of origin	Qty	U.O.M
	Description	Trace reference		TQ number		
10	CCR264SS3-06 CCR264SS3-06 RIVET NUT PLATE	1000427506 87589712 4500104430		US 0001567054	24,000	EA

MAN CERTS & TEST REPORTS REQ.
PART ARE DUAL CERTIFIED TO TO REQUIRED PARTS.

Certificate of Conformance:

Certifies that the whole of the supplies detailed hereon: Have been manufactured, inspected and tested and unless otherwise stated, conform in all respects to the relevant Specifications, Drawings and Contract/Order; are new and unused and are covered by the manufacturer's/supplier's Certificate of Conformance and are re-issued in accordance with the quality requirements of our BS.EN.ISO 9001:2008 and AS/EN9120 registration: Approval No:0927248 and customer approval stated

Returns will not be accepted without a valid RMA number, please ring 01702 560738 to request an RMA number

Where product is not identified as "ITAR" or other export regulation our supplier/manufacturer has advised that product is not subject to export control

This document is electronically controlled and only applicable with actual transaction, this C of C is valid without written signature

Angele Goldberg
Quality Manager



Warehouse: B/E Aerospace CMII (formerly Setair Hardware UK Ltd), 8 Purdeys Way, Purdeys Industrial Estate,
Rochford, Essex, SS4 1NE Tel: +44(0) 1702 560700 Fax: +44(0) 1702 560750
B/E Aerospace Consumables Management II Ltd, Registered in England Company registration nbr: 00446288,
Shoreham Airport, Shoreham by Sea, West Sussex BN43 5FN, UK
Phone +44 1 273 464 046 Fax +44 1 273 464 577 VAT NO. GB 250 4769 59
Bank: Nordea London, USD account 404878 0043656802 Swift Code: NDEAGB2LXXX
Bank: Nordea London, GBP account 404878 0043656801 Swift Code: NDEAGB2LXXX





CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO364327
Order Date: 11/29/11
Print Date: 02/29/12

Page: 1



Sold-To: 10013612

Ship-To: 10042248

SOLD TO
BE CONSUMABLES MGMT II LTD.
SHOREHAM AIRPORT
SHOREHAM BY SEA
WEST SUSSEX BN43 5FN
ENGLAND

SHIP TO
BE CONSUMABLES MGMT II LTD
C/O DHL GLOBAL FORWARDING
4000 REDONDO BEACH
REDONDO BEACH, CA 90278

Salesperson (s):

Purchase Order: 4500104430

Credit Terms: Net 60
Net 60

Ship Via: DB SCHENKER

FOB: Origin - Collect

Remarks:

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
3	CCR264SS-3-06		1600			EA	03/06/12
	Customer Item: =CCR264SS-3-06						
	BACR15DR3-6						
	CAN43019-6SS						
	NSA5448-24-06						
	PS1-12635-6						
	S1972-6						
		EZ LINE 87583723		96800.0		()	
		EZ LINE 87589712		94400.0		()	

1000427496



1000427506

TEST REPORTS ENCLOSED
DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



1000427506

Certified True Copy
Date: 29-01-2013
Signature:

B/E
AEROSPACE

Colebrook

1000427506



CHERRY AEROSPACE
1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited
Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report Cherry® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Part Numbers	Rev	Proc. Spec.	Rev
CCR264SS-3-06	AF	PS-NPR-200	M

Lot I.D. No.: 87589712

Lot Size: 100,000

MFG. Date: February 24, 2012

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87589712	A68539	C-1018/ ASTM-A 510/ ANNEALED	CAD PL / QQ-P-416,T2,C2	None
Stern	87603503	A69215	Carbon Steel per ASTM A-510	None	None

W.O. #: 12130101

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR				TENSION				AIR EXP.			
	105				155				0.109			
	26				26				32			
RESULTS	172	189	176	180	208	207	206	206	0.114	0.114	0.115	0.114
	176	184	180	181	204	197	204	200	0.114	0.114	0.115	0.115
	176	216	177		202	209	204		0.115	0.115	0.116	0.115
	186	202	180		190	207	204		0.115	0.115	0.116	0.116
	177	172	177		206	205	206		0.115	0.116	0.117	0.114
	158	185	181		204	209	203		0.116	0.117	0.113	0.114
	204	176	182		202	198	204		0.116	0.114	0.114	0.115
LOAD VALUES IN POUNDS	198	180	178		201	208	201		0.114	0.114	0.114	0.115

<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>	<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>
125	EXAMINATION	PASS	32	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev.:
Rev. Date: 2/24/2012

Inspector

V. Iriarte



Insp. Control #:

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

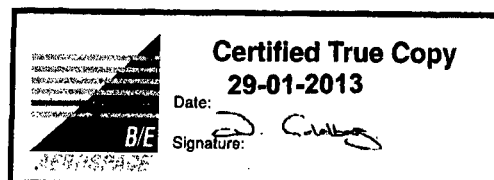
This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

Form No. 1141-10-77 Rev. J 07/15/10 CR10-0832

Page 1 of 2



1000427506



1000427506

**CHERRY[®] AEROSPACE**1224 East Warner Avenue
Santa Ana, CA 92707-0157Accredited
Nadcap[™]Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab**Final Inspection & Test Report**
Cherry[®] Rivet**An ISO9001 and AS9100 registered company. OASIS #6111041606**Lot I.D. No.: **87589712**

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
BACR15DR3-6	AH		
CAN43019-6SS	4	PS-NPR-200	M
NSA5448-24-06	B	PS-NPR-200	M
PS1-12635-6	A	PS-NPR-200	M
S1972-6	D	PS-NPR-200	M

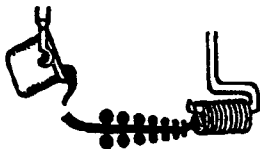
Page 2 of 2

Form No. 1141-10-77 Rev. J 07/15/10 CR10-0832



1000427506

	Certified True Copy
	29-01-2013
	Date:
B/E	Signature:
AEROSPACE	



10624 0058 **WIRETECH, INC.**
 6440 E. CANNING ST. SPUR 6604
 COMMERCE, CA
 90040

MILL TEST CERTIFICATE

IVACO ROLLING MILLS LP

P.O. BOX 322, L'ORIGNAL, ONTARIO, CANADA K0B 1K0
 TEL: (613) 675-4671 FAX: (613) 675-6868

This report contains analysis data that were produced under subcontract by laboratory CIT Fer et Titane, AZLA certificate number 0428-01.

NVLAP only covers the chemistry presented within this certificate. All other data is not covered by the NVLAP accreditation.



Lab Code 200143-0

ATTENTION: A Stephan/M Martinez VIA: EMAIL

Date Rolled 12-Nov-2011 Date Chemical Analysis Performed 06-May-2011

P.O. Number	Order Number	Heat Number	Customer Spec	Spec Rev. No.	Customer Part No	Billet Order	Grade	Diameter
006753	10135916	W24229	1018AKFG	REV T 12/10/10	1018-3C055-C	322210	1018AK CHQ	5.50 mm

Heat Analysis																	
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	N	B	V	Ti		
Spec. Min *	.16	.65									.035						
Actual	.16	.73	.004	.002	.05	.04	.08	.07	.004	.003	.050	.0054	.0001	.004	.002		
Spec. Max*	.19	.85	.020	.020	.10	.08	.10	.10	.040	.020	.060	.0090	.0005				

This is to certify that heat number W24229 is in conformance with the required specifications.

Heat analysis obtained by test methods ASTM E415 and ASTM E1019.
 *Minimum and maximum refer to the required customer specification.

This is to certify that the material is in conformance with the required specifications.

Radioactive emissions are at background levels.

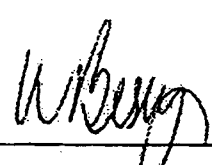
This steel was produced using a fine grain steelmaking practice (8-11).

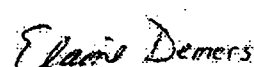
Aluminum to Nitrogen ratio = 9.259

Results of Physical Testing			
	UTS (KSI)	ROA (%)	DIA (in)
Average	69.43	74.58	.2165

JAN 09 2012



APPROVED BY: 
 Supervisor, Chemistry Laboratory and Billet Inspection

ISSUED BY QUALITY ASSURANCE: 
 Date: 14 Nov 2011 Specification Clerk

This Certificate shall not be reproduced except in full, without the written approval of Ivaco Rolling Mills LP, a Heico Company. This certificate is not to be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Certified True Copy
 29-01-2013

Date:

Signature:

1000427506



1000427506

1000427506


**CHARTER
STEEL**

 A Division of
Charter Manufacturing Company, Inc.

EMAIL

 1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

CHARTER STEEL TEST REPORT
Reverse Has Text And Codes

 Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA-90040
Kind Attn :Cert To Contact

Customer P.O.	6694-5
Customer Part #	1018C3C055-C
Charter Sales Order	70023337
Heat #	10136730
Ship Lot #	1042160
Grade	1018 R AK FG RHQ 7/32
Process	HR
Finish Size	7/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10136730												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM %WT	.17	.77	.008	.013	.08	.04	.09	.01	.08	.005	.001	
	AL	N	B	TI	NB							
	.037	.0070	.0001	.001	.001							
JOMINY(HRC)	JOM01	JOM02	JOM03									
	43	23	21									

 JOMINY SAMPLE TYPE ENGLISH - C
CHEM. DEVIATION EXT. - GREEN -

				Test Results of Rolling Lot# 1042160			Mean Value	TENSILE LAB - 0358-02 RA LAB - 0358-02
				# of Tests	Min Value	Max Value		
TENSILE				1	72.7	72.7	72.7	
REDUCTION OF AREA				1	69	69	69	

 NUM DECARB = 1 AVE DECARB = .002
REDUCTION RATIO = 803:1

Specifications:

 Manufactured per Charter Steel Quality Manual Rev 9.08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3000 Revision = T Dated = 10-DEC-10

Additional Comments:

OCT 26 2011



A68539

 Charter Steel
Saukville, WI, USA

Rem: Load1, Fax0, Mail0

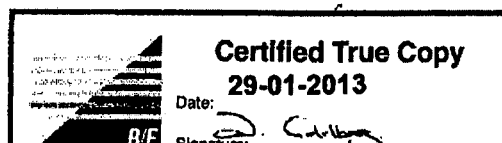


Page 1 of 1

 This MTR supersedes all previously
dated MTRs for this order

 Janice Barnard
Manager of Quality Assurance
07/21/2011


1000427506





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
3	2000	EA	MS21042L08		44001-000	MACLEAN-ESNA	019L2		


Jason Lewis
Vice President of Quality

03/06/14

Date
12/18/12
14:25
Ship#: 060730

Sold BE AEROSPACE INC
To PO BOX 025263
MIAMI, FL 33102-5263

Ship B/E AEROSPACE
To 9835 NW 14TH ST
MIAMI, FL 33172

Order No.	Order date	Cust No.	Loc	Sls rep	P.O. No.	Job No.	Ship Via	Col Ppd
073980	5/07/12	552550	29	999			Not on file	COLLECT Collect
OHRB90								

Order No.	Qty ship	B/O	Item description	Number / Level	UM	Need Date	Summ Qty	Item Loc
817000	1500000	0	056036	MS21042L08	EA			29-Loc
817000			M52LF3324-82			(1/08/13)		
***** CERTS REQUIRED *****								
***** DFAR 252.225.7014 REQUIRED *****								
10/5/12								
A50A	0		43979-000			27,940		
A50A	0		44001-000			245,276		
A50A	0		44570-000			8,881		
A50A	DFAR		43886-000			534,903		

***** ORDER COMMENTS *****
QTY TOLERANCE +/-2%
UNDER 150# FEDEX GROUND
0331-0149-0 MARK COLLECT
OVER 150# FEDEX NATIONAL LTL
018757
STANDARD FRT TERMS: EXW
ALL ITEMS MUST BE NEW AND TO LATEST
REVISION
"DO NOT COVER ESNA PRODUCT LABEL"

*** Shipment Summary: 35 Cartons 2 Pallets 1,235.00 Weight

Certificate of Analysis

Radcliff Wire Inc. 97 Ronzo Rd., P.O. Box 603, Bristol, CT 06010

Date Shipped: 12/15/2010

PO #: VP105019

Qty. Shipped: 166 LBS-12-
BLACK MIG
SPOOLS

Radcliff No.: 119153

Heat No.: Z1375MK13

Customer: CHERRY AEROSPACE
SANTA ANA OPERATIONS
1224 EAST WARNER AVE
SANTA ANA, CA 92705-5414

Country of Origin: USA

Original Mill Source: USA

Size: .006 X .011 X .056 ***

Material: A286 Stainless Steel

Description: SPECIAL SHAPE

Specification: AMS 5731 REVL, AMS 5737 REV P
CHEM ONLY

Notes:

PART# M189.44 REV W
DFAR COMPLIANT
NET WGT 166 LBS

Chemical Properties

Al: 0.17%	B: 0.006%	Bi: PPM<0.1%	C: 0.04%	Co: 0.06%
Cr: 14.57%	Cu: 0.06%	Fe: 56.57%	Mn: 0.11%	Mo: 1.26%
Ni: 24.52%	P: 0.007%	Pb: PPM0.3%	S: 0.003%	Si: 0.18%
Ti: 2.14%	V: 0.3%			

Tensile: 103 KSI

Rockwell:

Certs/Material

DEC 30 2010



[Signature]

Lisa Platek

Certification Clerk



The material as shipped is free from mercury contamination



A-1 Wire Tech, Inc.

NORTH AMERICA'S PREMIER MANUFACTURER OF HIGH NICKEL & STAINLESS STEEL ALLOYS

4550 Kishwaukee Street
Rockford, Illinois 61109

Certified Material Test Report

HEAT/LOT

Load ID. 00080266

Z1375MK13

SOLD TO

Page 1

Radcliff Wire
97 Ronzo Road
Bristol, CT 06011-0603
USA

QUALITY SYSTEMS
Certificate 3.1 as in EN 10204
Material manufactured in accordance
with a quality management system
certified to ISO 9001:2008 by
ABS-QE (Certification No. 33373)

SALES ORDER

094922 / 1

Date Printed 08/12/2010

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	PIECES	SHIPMENT DATE						
41848	116566	381.00	3	08/12/2010						
PRODUCT: Alloy: A286 Diameter: .034" Temper: 1/8 Hard Finish: .. 7662861-034-50-ST										
CERTIFICATION REQUIREMENTS										
*As Shipped Properties										
TEST	UNITS	RESULTS								
*Tensile	ksi	111								
Chemical Analysis %										
C	Mn	Si	P	S	Cr	Ni	Co	Ti	V	Fe
.04	.11	.18	.007	.003	14.57	24.52	.06	2.14	.3	56.57
Cu	Mo	B	Al	Pb	Bi					
.06	1.26	.006	.17	PPM: 3	PPM: .1					
Specifications										
*Melt Source DFARS COMPLIANT / MELT SOURCE: HUNTINGTON ALLOYS / COUNTRY OF ORIGIN: USA / MFG: USA										
Specification:										
End of Certification										

Visual and dimensional examination
Satisfactory
Material, when shipped is free from
contamination by mercury, radium,
alpha source, and low melting
point elements.

This is to certify that all required samplings, inspections, operations and tests
performed by A-1 Wire Tech, Inc. and its subcontractors are in accordance with the
specification requirements. The test report represents the actual attributes of the
material furnished and the values shown are correct and accurate. The material
described by this certificate is in full compliance with all order and inspection
requirements. We hereby certify that the above data are in accordance with the
specification requirements.

Suzanne Mullins

Suzanne Mullins
Quality Assurance Manager

DEC 30 2010



A66188

RADCLIFF WIRE INC.
Z1375MK13

HUNTINGTON ALLOYS CORPORATION

A Special Metals Company

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE.

WESTERN U.S.

P

HUNTINGTON, WEST VIRGINIA 25705-1771

A-1 WIRE TECH 840 AIRPORT DR ROCKFORD, IL 61109	CERTIFIED MATERIAL TEST REPORT		No. 84052
	HA ORDER NO/ITEM 300018997 1	DATE 06/24/09	PAGE OF 1 3
	QUANTITY 7332 LBS	INSPECTED BY HA/SMC	
	CHARGE ORDER NO. 22351-2	MARK ORDER NO. 22351-2	
A-1 WIRE TECH INC 4550 KISHNAUKEE ST ROCKFORD IL 61109	DESCRIPTION OF MATERIAL SHIPPED INCOLOY ALLOY A-286 VIN-ESR HR ROD - COIL PKL ANN .3120 IN COIL COIL		
	THIS IS TO CERTIFY THAT ALL REQUIRED SAMPLING INSPECTIONS AND TESTS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE ORDER AND SPECIFICATION REQUIREMENTS. THE TEST REPORT REPRESENTS THE ACTUAL ATTRIBUTES OF THE MATERIAL FURNISHED AND THE VALUES SHOWN ARE CORRECT AND TRUE. THE MATERIAL DESCRIBED BY THIS CERTIFICATE IS IN FULL COMPLIANCE WITH ALL ORDER AND INSPECTION REQUIREMENTS. WE HEREBY CERTIFY THAT THE BELOW FIGURES ARE IN ACCORDANCE WITH THE SPECIFIED CONTRACT REQUIREMENTS.		

*****THIS REPORT RELATES ONLY TO THE ITEM(S) TESTED AND MAY NOT BE REPRODUCED EXCEPT IN FULL.*****

SPECIFICATIONS: A-1 A286 RESTRICTED FOR CUST 187, 1250, 211 REV 9-30-06\
 SAE AMS 5731L CHEM ONLY\SAE AMS 5732J CHEM ONLY\
 SAE AMS 5734K CHEM ONLY\SAE AMS 5737N CHEM ONLY\
 SAE AMS 5726D CHEM ONLY\GE C50TF35-S4 AM 7 CLASS A CHEM ONLY\
 SPS-M-118 REV L CHEM ONLY\GE S-400 (10-31-07)\
 GE S-1000 (1-2-2008)\
 HEAT TREAT & STRESS RUPTURE CAPABILITY TESTING\
 QUALITY SYSTEM CERTIFICATION: ISO 9001:2000 (ABS-QE CERT. 30125);
 EN 10 204/DIN 50049 (TYPE 3.1)

UNS:S66286

A66188



RADCLIFF WIRE, INC.-
21375MK13

AL DEC 30 2010

CHEMICAL ANALYSIS (WT. X)									
HEAT#	C TI	MN CO	FE MO	S P	SI B	CU PB/PPM	NI BI/PPM	CR V	
Z1375MK	0.04 2.14	0.11 0.06	56.57 1.26	0.003 0.007	0.18 0.006	0.06 0.3	24.52 <0.1	14.57 0.30	0.17

TO CONVERT PPM TO WT.X, MOVE DECIMAL POINT FOUR PLACES TO THE LEFT.
 MELT METHOD: VIN + ELECTROSLAG REMELTED

MECHANICAL PROPERTIES									
HEAT/LOT	QUANTITY	HARD NESS	GRAIN SIZE	YIELD .2XPSI	TENSILE PSI	XELG X 100 X 100	R/A X	DEG F	
Z1375MK									
ROOM TEMP-	-CAPABILITY **			1022	1595	28.1	51.5		HEAT TREAT #2
ROOM TEMP-	-CAPABILITY **			1113	1647	26.8	49.1		HEAT TREAT #1
HARDNESS -HRC	-CAPABILITY	29.7							HEAT TREAT #1
HARDNESS -HRC	-CAPABILITY	27.6							HEAT TREAT #2
STRESS RUPTURE-CAPABILITY				1200 DEG F/	75,000 PSI STRESS/	062.0 HRS /	9.8XEL IN 4D	/16.2XRA/	

HUNTINGTON ALLOYS CORPORATION
A Special Metals Company

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE.

WESTERN U.S.

P

HUNTINGTON, WEST VIRGINIA 26705-1771

CERTIFIED MATERIAL TEST REPORT No. **84052**

A-1 WIRE TECH
840 AIRPORT DR
ROCKFORD, IL 61109

A-1 WIRE TECH INC
4550 KISHWAUKEE ST
ROCKFORD IL 61109

HA ORDER NO./ITEM	DATE	PAGE	OF
300018997 1	06/24/09	2	3
QUANTITY	INSPECTED BY		
7332 LBS	HA/SMC		
CHARGE ORDER NO.	MARK ORDER NO.		
22351-2	22351-2		

THIS IS TO CERTIFY THAT ALL REQUIRED SAMPLINGS INSPECTIONS AND TESTS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE ORDER AND SPECIFICATION REQUIREMENTS. THE TEST REPORT REPRESENTS THE ACTUAL ATTRIBUTES OF THE MATERIAL FURNISHED AND THE VALUES SHOWN ARE CORRECT AND TRUE. THE MATERIAL DESCRIBED BY THIS CERTIFICATE IS IN FULL COMPLIANCE WITH ALL ORDER AND INSPECTION REQUIREMENTS. WE HEREBY CERTIFY THAT THE BELOW FIGURES ARE IN ACCORDANCE WITH THE SPECIFIED CONTRACT REQUIREMENTS.

REV. 808

INCOLOY ALLOY A-286 VIN-ESR HR ROD - COIL PKL ANN
.3120 IN COIL COIL

STRESS WAS INCREASED PER SPECIFICATION OPTION TO INDUCE EARLY FRACTURE

STRESS RUPTURE SPECIMEN DIAMETER - .250"
HEAT TREAT #2

STRESS RUPTURE-CAPABILITY 1200 DEG F/ 70,000 PSI STRESS/ 073.1 HRS / 33.4XEL IN 4D /46.8XRA/
STRESS WAS INCREASED PER SPECIFICATION OPTION TO INDUCE EARLY FRACTURE

STRESS RUPTURE SPECIMEN DIAMETER - .250"
HEAT TREAT #1

21375MK 13 9 PCS
ROOM TEMP-HRB -AS SHIPPED *** 76.0 0380 0899 47.8 70.6

GRAIN SIZE-AS SHIPPED AGS ASTM NO. 8.
NORMAL - TRAN

** TENSILE SPECIMEN GAUGE LENGTH - 4 X DIAMETER
*** TENSILE SPECIMEN GAUGE LENGTH - 01.500

YIELD STRENGTH WAS DETERMINED USING A STRESS STRAIN CURVE

CAPABILITY HEAT TREAT #1: HEATED AT 1650 DEG F 30 MINUTES, WATER QUENCHED.
THEN HEATED AT 1325 DEG F 16 HOURS, AIR COOLED.

CAPABILITY HEAT TREAT #2: HEATED AT 1800 DEG F 30 MINUTES, WATER QUENCHED.
THEN HEATED AT 1325 DEG F 16 HOURS, AIR COOLED.

NO WELDING OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

COUNTRY OF ORIGIN: MELTED AND MANUFACTURED IN THE USA

VISUAL AND DIMENSIONAL EXAMINATION SATISFACTORY.

MATERIAL, WHEN SHIPPED, IS FREE FROM CONTAMINATION BY MERCURY, RADIUM, ALPHA SOURCE, & LOW MELTING ELEMENTS

"CHEMICAL ANALYSIS AS REQUIRED FOR CARBON, SULFUR, NITROGEN OR OXYGEN IS PERFORMED BY COMBUSTION TECHNIQUES.
ALL OTHER REPORTED ELEMENTS ARE ANALYZED BY X-RAY AND/OR EMISSION SPECTROSCOPY."



A66188



RADCLIFF WIRE, INC.
Z1375MK13

DEC 30 2018

HUNTINGTON ALLOYS CORPORATION
A Special Metals Company

NOTE: THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT
STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE
AS A FELONY UNDER FEDERAL STATUTE.

WESTERN U.S.

P

HUNTINGTON, WEST VIRGINIA 25706-1771

A-1 WIRE TECH 840 AIRPORT DR ROCKFORD, IL 61109	CERTIFIED MATERIAL TEST REPORT		No. 84052	
	HA ORDER NO./ITEM 300018997 1	DATE 06/24/09	PAGE 3	OF 3
A-1 WIRE TECH INC 4550 KISHWAUKEE ST ROCKFORD IL 61109	QUANTITY 7332 LBS	INSPECTED BY HA/SMC		
	CHARGE ORDER NO. 22351-2	MARK ORDER NO. 22351-2		
DESCRIPTION OF MATERIAL SHIPPED INCOLOY ALLOY A-286 VM-ESR HR ROD - COIL PKL ANN .3120 IN COIL COIL				

THIS IS TO CERTIFY THAT ALL REQUIRED SAMPLING INSPECTIONS
AND TESTS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE
ORDER AND SPECIFICATION REQUIREMENTS. THE TEST REPORT
REPRESENTS THE ACTUAL ATTRIBUTES OF THE MATERIAL
FURNISHED AND THE VALUES SHOWN ARE CORRECT AND TRUE.
THE MATERIAL DESCRIBED BY THIS CERTIFICATE IS IN FULL
COMPLIANCE WITH ALL ORDER AND INSPECTION REQUIREMENTS.
WE HEREBY CERTIFY THAT THE BELOW FIGURES ARE IN
ACCORDANCE WITH THE SPECIFIED CONTRACT REQUIREMENTS.

REV. 008

"QUALITY SYSTEM MEETS REQUIREMENTS OF DIRECTIVE 97/23/EC (PRESSURE EQUIPMENT DIRECTIVE),
ANNEX 1, CHAPTER 4.3 PER ABS GROUP LTD CERTIFICATE 41734 (EXPIRES JULY 31, 2011)."

AUTHORIZED QUALITY CERTIFICATION REPRESENTATIVES :
W.E. BOLEN, P.D. CUSTER, M.A. MORRISON, P. WAUGH, D.K. MILLER

CERTIFIED TESTING LABORATORY DATA SOURCE IN II
AECB VENDOR NO. 47150

M.R.B. CASE RECORD NO.: NONE

AUTHORIZED VENDOR SIGNATURE

DATE: 06/24/09



A66188



RADCLIFF WIRE, INC.-F
Z1375MK13

DEC 30 2010



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
14	50	EA	AN3-14A		13157	AIRPASCO INDUSTRIES	3Z958		


Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14

Airfasco Industries, Inc.

2655 Harrison Ave SW
Canton, OH 44706
Ph: 330-430-6190, Fax: 330-430-6199,

Packing Slip

Original

Invoice #: 105793

Invoice Date: 1/17/2008

Time: 10:59:52 AM

Page: 1

To:

M&M AEROSPACE HARDWARE
PO BOX 025263
MIAMI, FL 33102
USA
Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

Ship To:

M&M AEROSPACE HARDWARE
10000 NW 15TH TERRACE
MIAMI, FL 33172

Cust. PO#: 0EH731

Terms: NET 60

Ship Via: FEDEX GROUND COShip Via Acc: 0331-0149-0

Order Date: 1/13/2008

of Items: 25

of Boxes: 165

Weight: 6230

Prepared By:

Sales Order: 88295

Ship Log #: 1

Ship Order:

Customer #: 12726

VAT #:

Cust VAT #:

Ship Date: 1/17/2008

Buyer: JOE GRAY

FOB:

AWB:

Shipment:

Item	Part Number/Description	Shipped	BackOrd	CD	Unit Price	UOM	Total Amt
1	AN3-12 BOLT, AN Loc/Whse: AFC2 Control #: 131799-1 L-13988 TEST REPORT L-13988 2 BOXES	5000	0	NE		EA	
2	AN3-13 BOLT, AN Loc/Whse: Control #: 0-0	0	15000	NE		EA	
3	AN3-14A BOLT, AN Loc/Whse: AFC2 Loc/Whse: AFC2 Control #: 109288-1 L-12525 104,300 PIECES 41 BOXES TEST REPORT L-12525 L-13157 130,800 PIECES 57 BOXES TEST REPORT L-13157	235100	14900	NE		EA	
4	AN3-24A BOLT, AN Loc/Whse: AFC2 Loc/Whse: AFC Control #: 129561-1	47630	52370	NE		EA	

C OF C ENCLOSED

165 BOXES 689,1228,1017,1108,1078,1110 LBS

6 PALLETS

PARTS MADE IN USA

THANK YOU!



2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

CERTIFICATE OF CONFORMANCE

M&M AEROSPACE HARDWARE

I hereby certify that on 1/16/2008 AIRFASCO Industries provided the supplies called for by Contract/ PO Number 0EH731 in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States.


WM. DENT

Quality Assurance Representative

PART NUMBER	LOT NUMBER	QUANTITY	PART NUMBER	LOT NUMBER	QUANTITY
AN3-14A	13157	130,800			

C1F3-0



AIRFASCO

INDUSTRIES

MANUFACTURER OF AEROSPACE PRODUCTS

2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199

PHYSICAL AND CHEMICAL CERTIFICATION

DATE MFG.: 06/05/06

PART NO.: AN3-14A per NASM3-14A rev. 1

AFC LOT NO.: 13157

QTY MFG.: 130,800

PROCUREMENT SPECIFICATION: Produced per NASM 6812

HEAT TREAT

VENDOR: Brite Metal

CERTIFICATION NO.: B-133240

PROCUREMENT SPECIFICATION: Heat Treat per MIL-H-6875 H

PLATING

VENDOR: Beringer Plating

CERTIFICATION NO.: 39931

PROCUREMENT SPECIFICATION: Cadmium Plate per QQ-P-416, Type II, Class 2, F

MATERIAL

MILL: Co-Steel

COUNTRY OF MELT: USA

HEAT: P908866

GRADE SPECIFICATION: Alloy Steel per AMS 6300 C, Type 4037, .218"

4037 MATERIAL CHEMISTRY											
ELEMENT-ID.	-C-	-MN-	-P-	-S-	-SI-	-NI-	-CR-	-MO-	-CU-	-AL-	Other
LADLE	.380	.790	.015	.008	.200	.010	.030	.240	.101	.037	

PHYSICAL PROPERTIES				
PHYSICAL	TENSILE	YIELD	SHEAR	HARDNESS
REQUIRED	2,210 lbs.	1,690 lbs.	2,125 lbs.	HRC 26-32
ACTUAL	3,199 lbs.	2,740 lbs.	2,467 lbs.	HRC 28-31

Non-Destructive Magnetic Particle per ASTM-E-1444-01

We hereby certify that the above data is correct and that the fasteners have been manufactured and inspected in accordance with Airfasco Industries quality requirements.

Airfasco Industries

Quality Assurance Representative:

T. West



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
32	100	EA	CCR264SS-3-06		87589712	CHERRY AEROSPACE SAN	11815		



Jason Lewis
Vice President of Quality

03/06/14

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY
POCAHONTAS, ARKANSAS 72455

CERTIFICATE OF QUALITY COMPLIANCE

DATE: 12/19/2012

TO: B/E AEROSPACE
9835 NW 14TH ST
MIAMI, FL 33172

ESNA PART NO. M52LF3324-82
MANUFACTURER'S LOT SIZE 349395 (APPROX. WT. COUNT)
MANUFACTURED UNDER SHOP ORDER NUMBER 44001 - 000
ORIGINATED AS SHOP ORDER NUMBER
CUSTOMER PO #: OHRB90 PACKING LIST #: 60730
ESNA ORDER #: 073980 QTY PACKAGED: 245276
CUSTOMER PART #: MS21042L08 & NAS1291-08

ACCEPTANCE TESTS PER NASM25027

MATERIAL RAW MATERIAL TYPE .188 4037 WIRE DATE MFG: 09/07/12
RAW MATERIAL CONFORMS TO AMS 6300E AS EVIDENCED BY THE ATTACHED MILL CERTIFICATION. ESNA SHOP
ORDER NO. 44001 - 000 MILL HEAT NO. 10172300 VENDOR WIRE TECH

FINISH FINISH TYPE SAE AMS QQ-P-416B, TYPE II, CLASS 2 -BLACK
LUBRICANT TYPE EVERLUB 620C DRY FILM LUBE PER AS5272 TYPE I

ACCEPTED 23HRS STRESS EMBRITTLEMENT LOADED TO 33 IN. LBS. MIN.

AXIAL STRENGTH REQUIRED LBS. MINIMUM 2500 ALL SAMPLE PIECES TESTED MEET OR EXCEED
EXCEEDS LBS. 2600 MINIMUM REQUIREMENTS.

SAMPLE SIZE 27 PIECES.

HARDNESS REQUIREMENT HRC 43-45

WORKMANSHIP CONFORMS DIMENSIONALLY TO MS21042L08 PER NASM21042 (NEW)& NAS1291-08 REV 13 STANDARD.
BEARING SURFACE SQUARENESS AS SPECIFIED PER NASM25027

DISCONTINUITIES

WITHIN LIMITS PER NASM25027

AND MIL-STD-271D/ACN 1/ AND REV E/ NOTICE 2/ AND REV F/ NOTICE 1.

ASTM E1444 REV 5

MT PER SPEC 725 X

SAMPLE SIZE(MT - PCS): 32

ACCEPTED(PCS): 32

PT PER SPEC 731

SAMPLE SIZE(PT - PCS): 0

ACCEPTED(PCS): N/A

This is to certify that all applicable plating, heat treating, and inspection processing and that all material used in the manufacture of subject parts conform to the specification or drawings received by ESNA and set forth in the subject purchase order; that the parts are of good material and workmanship; and that all necessary records, including chemical and physical where applicable, will be made available for review upon request. The inspection and test reports provided represent the actual attributes of the items furnished on this contract and indicate full compliance with all applicable specification and contract requirements.

This is to certify that the materials supplied against the subject order are free of contamination by presence of mercury.

SIGNATURE

Mara Kildow
JIM CORTY, QUALITY ASSURANCE MANAGER

Mara Kildow, Quality Technician

FSCM/CAGE NO. 019L2

QAF68 REV. 10-12-11

MACLEAN-ESNA
A MACLEAN-FOGG COMPANY
POCAHONTAS, ARKANSAS 72455

LOCKING TORQUE TEST

CUSTOMER NAME B/E AEROSPACE
9835 NW 14TH ST
MIAMI, FL 33172

CUSTOMER DUE DATE

12/19/2012

CUSTOMER PO # OHRB90
ITEM NUMBER 056036
QUANTITY 245276
THREAD SIZE .1640-32 UNJC-3B
HEX .221 MAX
LINE NO 1
MS NUMBER - REF: MS21042L08 PER NASM21042 (NEW)& NAS1291-08 REV 13

ESNA ORDER # 073980
PART # M52LF3324-82
SHOP ORDER # 44001 - 000
LOT QUANTITY 349395
PARENT SHOP ORDER #

Sample Size & Requirements per Spec NASM25027

SampleSz 27

REQUIREMENT: 1ST, 7TH, 15TH, INSTALLATION MAXIMUM TORQUE
15TH BREAKAWAY MINIMUM TORQUE

15

1.5

SAMPLE #	1ST ON	1ST BREAK	7TH ON	7TH BREAK	15TH ON	15TH BREAK
1	15	07	10	05	10	05
2	12	05	10	05	07	05
3	11	10	08	07	05	04
4	15	07	10	05	07	06
5	13	11	10	09	08	07
6	15	08	10	05	08	04
7	12	07	10	05	08	05
8	13	12	10	08	06	06
9	10	08	06	05	05	04
10	15	12	10	08	06	05
11	11	08	07	06	05	04
12	15	10	12	08	10	05
13	13	07	12	05	08	05
14	15	07	12	07	08	05
15	15	05	12	07	10	05
16	10	08	06	06	05	03
17	12	10	09	09	08	06
18	13	11	10	07	05	04
19	15	10	07	06	05	04
20	13	12	10	09	07	05
21	15	12	11	10	08	07
22	13	12	10	09	06	05
23	10	09	08	07	05	04
24	13	10	09	09	06	05
25	12	10	09	08	07	05
26	15	12	09	07	05	04
27	10	07	06	05	04	03

SIGNATURE

Mara Kildow
JIM CORTY, QUALITY ASSURANCE MANAGER
Mara Kildow, Quality Technician



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

Maclean - ESNA
611 Country Club Road
Pocahontas, AR 72455
USA

WORK ORDER
092104

CERTIFICATION

HEAT NO.
10172300
SALES ORDER / RLS
845049 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

44001-000

CERT# 911.01

CUSTOMER P.O. 23433-00	CUSTOMER PART 9290070188	QUANTITY 1,656 Lbs	CARRIERS 1	LADING NO 00099344	SHIPMENT DATE 09/07/2012			
SPECIFICATION M054037-101900A A-4037, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.187/0.189 Specifications: AMS 2301K, AMS 6300E, 1042C								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C .38	Si .23	Mn .74	P .009	S .009	Cu .08	Ni .05	Cr .16	Mo .21
Physical Properties								
Grain Size	Jominy 1	Jominy 2	Inclusions	Macro	Cleanliness	Mill Source		
6 J1=55	J5=35	S2-R1-C2	GOOD	F&S=0	Charter			
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS					Results		
Tensile Strength	KSI					76.7		
Decarb (Total)	In					0.00		
Yield Strength	KSI					65.2		
% Reduction of Area	%					70.4		
Rockwell Hardness B Scale	HRB (s)					82		
% Elongation	%					27.5		
2mir 27979 PO 23433 188 (4.8mm) 4037								
Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.								
REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.								
Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.								
TEST RESULTS RELATE ONLY TO THE ITEMS TESTED								
DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)								
Material is free of mercury, radium, or alpha contamination.								



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Attn: Andre Stephan
Los Angeles, CA-90040

Cust.P.O.	6774-11
Customer Part #	4037C1A070-C
Charter Sales Order	70028549
Heat #	10172300
Ship Lot #	4120922
Grade	4037 R SK FG AQ 9/32
Process	HRSA
Finish Size	9/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10172300

Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM	.38	.74	.009	.009	.23	.05	.16	.21	.08	.008	.001
%WT	AL	N	B	TI	NB						
	.026	.0060	.0001	.000	.001						
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	55	54	51	42	35	30	28	27	26	25	23
	JOM14	JOM16	JOM18								
	22	21	20								

JOMINY SAMPLE TYPE ENGLISH = C
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00
CHEM. DEVIATION EXT.-GREEN =

44001-000

Test Results of Rolling Lot# 1058292

REDUCTION RATIO = 488:1

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2.0	75.1	75.3	75.2	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	66	69	67	RA LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .004
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 91.3

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = AMS 6300F / AMS 2301K / COP 3010M Revision = Dated =

Additional Comments:

2M1R 2779
PG 23433
.188 (4.8mm) 4037

Charter Steel
Saukville, WI, USA



Page 1 of 1

This MTR supersedes all previously
dated MTRs for this order

Janice Barnard
Manager of Quality Assurance
02/14/2012

Rem: Load1,Fax0,Mail0

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G056	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

44001-000



2mil 27979
 PU 23433
 .188 (4.8mm) 4037



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
19	200	EA	AN4-11		22649	AIRFASCO INDUSTRIES	3Z958		



Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14

Airfasco Industries, Inc.

2655 Harrison Ave SW
Canton, OH 44706
Ph: 330-430-6190, Fax: 330-430-6199,

Packing Slip Original**Invoice #: 134790****Invoice Date: 2/26/2013****Time: 11:29:06 AM****Page: 1****To:**

B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102
USA
Ph: 305-592-5155 Fax: 305-591-8357 PURCHAS

Ship To:

B/E AEROSPACE
CONSUMABLES MANAGEMENT
9835 NW 14TH STREET
MIAMI, FL 33172

Cust. PO#: 0KTA87**Terms:** CREDIT CARD**Ship Via:** FEDEX GROUND CO **Ship Via Acc:** 0331-0149-0**Order Date:** 10/11/2012**# of Items:** 1**# of Boxes:** 15**Weight:** 666**Prepared By:****Sales Order:** 109799**Ship Log #:** 1**Ship Order:****Customer #:** 12726**VAT #:****Cust VAT #:****Ship Date:** 2/26/2013**Buyer:****FOB:****AWB:****Shipment:****WO #:**

Item	Part Number/Description	Shipped	BackOrd	CD	List Price	Disc	Unit Price	UOM	Total Amt
1	AN4-11 BOLT, AN Loc/Whse: AFC Control #: 150924-1 L-22649 TEST REPORT TEST REPORTS & DFAR	8120	8524	NE				EA	

C OF C ENCLOSED
1 PALLET 15 BOXES 666 LBS
PARTS MADE IN THE U.S.A.
THANK YOU!

Special Instructions:**Authorized Signature:**




**2655 HARRISON AVE. SW
CANTON, OH 44706
PHONE: (330)430-6190
FAX: (330)430-6199**

CERTIFICATE OF CONFORMANCE

B/E AEROSPACE

I Hereby Certify that on 2/25/13 Airfasco Industries provided the supplies called for by Contract/ PO Number **0KTA87** in accordance with all applicable requirements for shipment. I further state that the process certifications are in conformance with the contract requirements, including specifications and/or drawings, physical item identification (part number) and the quantity shown on this or attached acceptance document. The part numbers certified below have been manufactured in the United States. DFAR 252.225-7014 ALT 1 compliant in fastener base raw material melt source only, with heat number and country, does not include the post cadmium metal plating.


WM. DENT

Quality Assurance Representative

[illegible]



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

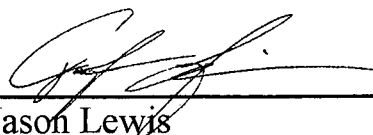
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
41	200	EA	MS20601AD4W8		86844202	CHERRY AEROSPACE SAN 11815			


Jason Lewis
Vice President of Quality

03/06/14

DE TRAY

Plating Works

Specialized Electro-Plating and Polishing
Nickel **Passivate**
Copper **Bright Dip**
Decorative Chrome **Strip Copper**
Satin Chrome **Descale**
Zinc
Cadmium

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-9411 Fax (816) 252-8527 • E-mail : DeTrayPlating@aol.com

June 4, 2013

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

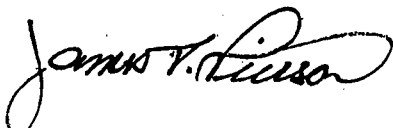
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 3. Please reference our
Invoice#170366 dated 6/04/2013 for:

Lot#- 67219

P.N.- AN525-10R7

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

Mac Fasteners
1110 Enterprise Street
Ottawa, KS 66067
USA

CERTIFICATION

WORK ORDER
97122A

HEAT NO.
541180
SALES ORDER / RLS
848332 / 3
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE			
81737	4037-.187	27,995 Lbs	30	00102007	02/07/2013			
SPECIFICATION: M044037-101870A A-4037, AQ, SKFG, CHQ WIRE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.1865/0.1875 Specifications: AMS 2301K, AMS6300D								
CERTIFICATION REQUIREMENTS								
Chemical Properties								
C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.38	.24	.76	.007	.007	.10	.05	.17	.22
Physical Properties								
Grain Size Jominy 1		Jominy 2	Inclusions Macro	Cleanliness	Mill Source			
6 J1=56		J5=32	S2-R1-C2	GOOD	F&S=0	Charter		
Country of Origin								
USA - DFAR Compliant								
Mechanical Properties								
TEST	UNITS	Results						
Tensile Strength	KSI	71.6						
Yield Strength	KSI	60.9						
% Elongation	%	24						
% Reduction of Area	%	77.2						
Rockwell Hardness B Scale	HRB (s)	80						
<p>Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."</p> <p>REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.</p> <p>Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.</p> <p>The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.</p> <p>TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.</p> <p>DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)</p> <p>"LATEST REVISIONS OF ASTM"</p> <p>Material is free of mercury, radium, or alpha contamination.</p>								



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

FILE

1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA 90040-
Attn: Janice Duran

6208-1
4037C1A055-C
264533
541180
550841
4037 R SK FG AQ
SA
7/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies those requirements.

Test Results of Heat Lot# 541180

Lab Code: 7388

OUTS. MELT SOURCE HEAT NUM. = N/R

Chemistry	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
WT%	0.38	0.76	0.007	0.007	0.240	0.05	0.17	0.22	0.10	0.007	0.001
	AL	N	B	TI	NB						
	0.025	0.0070	0.0001	0.001	0.001						

Jominy (HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	56	54	47	37	32	29	27	27	26	25	25	24
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	24	23	23	23	23	22	22	21	21	20	20	20

JOMINY SAMPLE TYPE ENGLISH = R JOMINY LAB = 0358-01

CHEM. DEVIATION EXT.-GREEN = N/R

AMS 2301 FRQ AVE = 0.00 AMS 2301 FRQ IND = 0.00

AMS 2301 SEV AVE = 0.00 AMS 2301 SEV IND = 0.00

Test Results of Rolling Lot # 394951

QC DEVIATION EXT.-GREEN = N/R

	# of Tests	Test Results of Processing Lot # 550841	Mean Value	
TENSILE (KSI)	2	Min Value	80.1	TENSILE LAB = 0358-02
REDUCTION OF AREA (%)	2	Max Value	82.1	RA LAB = 0358-02
			81.1	
			67	

NUM DECARB = 2 FREE FERRITE DECARB = 0.000 FREE FERR & PARTIAL DECARB = 0.002

CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION (%) = 82.5

QC DEVIATION EXT.-PROCESSED = N/R

Specifications:

Manufactured per Charter Steel Quality Manual Rev 8, 12-06-07

Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:

Customer Document = COP 3010

Revision = M Dated = 12-MAR-2003

Additional Comments:

MEETS REQUIREMENTS OF SPECIFICATIONS AMS6300E/AMS2301J

Charter Steel
Saukville, WI, USA



Janice Barnard
Janice Barnard
Manager of Quality Assurance
05/29/2008

Fax number: (323) 721-2738

Rem: Load0,Mail0,Fax0

Page 1 of 1



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

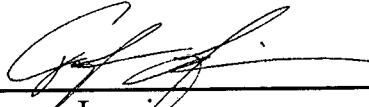
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
34	100	EA	CR3213-4-04		87453946	CHERRY AEROSPACE SAN	11815		


Jason Lewis
Vice President of Quality

03/06/14



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0321668
Order Date: 04/29/08
Print Date: 02/02/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0EZ588

Credit Terms: Net 30
Net 30

Ship Via: FEDEX FREIGHT

FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

TEST REPORTS ENCLOSED

DO NOT DESTROY

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
11	CR3213-4-04 Customer Item: M7885/2-4-04 NAS9301B-4-04 NAS9301BNS-4-04 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I *PREFERENCE FOR DOMESTIC SPECIALTY METALS	1600			EA	01/16/11	
12	CR3213-4-04 Customer Item: M7885/2-4-04 NAS9301B-4-04 NAS9301BNS-4-04 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I *PREFERENCE FOR DOMESTIC SPECIALTY METALS	E0904 1600	87453946	14900.0	EA	() 01/16/11	
		E0904	87453946	1818.0		()	

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0321668
Order Date: 04/29/08
Print Date: 02/02/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0EZ588

Credit Terms: Net 30
Net 30

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Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
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BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

TEST REPORTS ENCLOSED

DO NOT DESTROY

Ln	Item Number	Site T Location	Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
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12	CR3213-4-04 Customer Item: M7885/2-4-04 NAS9301B-4-04 NAS9301BNS-4-04 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I *PREFERENCE FOR DOMESTIC SPECIALTY METALS E0904 87453946	1600		1818.0	EA	01/16/11	

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

SIM NGUYEN



CHERRY AEROSPACE
SFS Fastener Division, a PCC Company



Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

1224 East Warner Avenue
Santa Ana, CA 92707-0157

Final Inspection & Test Report CherryMax® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	87453946
CR3213-4-04	AA	PS-CMR-3000	R	Lot Size:	18,000
** See 2nd Page for the Customer Parts				MFG. Date:	February 01, 2011

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87412320	A65900	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87423913	A65811	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A66345	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 5427007

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

QUALITY CONTROL CHECKS							DISASSEMBLY	
MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		TENSION		SPINDLE RETENTION		N/A B	
	655		285		125			
	8	N/A	8	N/A	8			
	C-N-M	B	C-N-M	B	C-N-M			
RESULTS	936		349		285			
	918		359		276			
	936		356		244			
	941		354		256			
	922		352		252			
C=CR N=NAS	944		368		270			
M=MIL B=BAC	941		361		243			
LOAD VALUES IN POUND	983		351		284			

<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>	<u>PCS.</u>	<u>ITEM</u>	<u>STATUS</u>
20	EXAMINATION	PASS	20	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev: -
Rev. Date: 2/1/2011
Inspector
I Reyes

Q Code

V09



The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



CHERRY[®] AEROSPACE
SFS fastener Division, a PCC Company



Accredited
Nadcap[™]

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

1224 East Warner Avenue
Santa Ana, CA 92707-0157

An ISO9001 and AS9100 registered company. OASIS #6111041606

Final Inspection & Test Report CherryMax[®] Rivet

Lot I.D. No.: **87453946**

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9301BNS-4-04	4	NAS1686	3
M7885/2-4-04	D	MIL-R-7885	D2
NAS9301B-4-04	4	NAS1686	3

KAISER ALUMINUM

SHIP TO:

CHERRY AEROSPACE LLC

VMI / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414


SOLD TO:

CHERRY AEROSPACE LLC

VMI / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414

Customer PO Number VP105020-1		NW WORK ORDER NO. 00551			
DESCRIPTION .123 5056 H32 STEM				AUTHORIZED SIGNATURE QUALITY CONTROL MANAGER	
CUSTOMER PART NO.		ALLOY 5056		TEMPER H32	
NW PART NO. H123A7				DATE SHIPPED 11/5/2010	
WEIGHT SHIPPED 2.103				We hereby certify that the material covered by this report has been inspected in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown on this sheet.	

		ULTIMATE		YIELD		% ELONGATION	
LOT NUMBER	# OF TESTS	STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K845834	3	48.83	49.92				

COMMENTS:
M005.123 REV P
QQA-430
MILL SOURCE KAISER
MADE IN USA

DEC 13 2010



4845832



A65900

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	5056		0.30		0.40		0.10	0.05	0.20	4.50	5.60	0.05	0.20	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
			0.10												
ALUMINUM REMAINDER															

KAISER ALUMINUM FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Specifications

QQA-430 REV C

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).



DEC 13 2010



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 11737

Kaiser Order Number: 624521308

Line Item: 1



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

CHERRY AEROSPACE LLC
1224 E. WARNER AVENUE
SANTA ANA, CA 92705-5414
USA

WORK ORDER
079123

CERTIFICATION

HEAT NO.
10075260
SALES ORDER / RLS
836902 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE
VPO92778	M272.1040	1,938 Lbs	2	00086598	11/01/2010

SPECIFICATION C208740-101040A

A-8740, AQ, SKFG, CHQ WIRE, SEAM & DEARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating,
Size:0.103/0.105 Specifications: AMS2301H, AMS6322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A, M
272.1040 REV. P.

CERTIFICATION REQUIREMENTS

Chemical Properties

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.40	.27	.96	.010	.014	.19	.43	.43	.22

Physical Properties

Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source
6 J5=53	J8=46	J10=41	S2-R1-C2	GOOD	F&S=0	Charter	

Country of Origin
USA - DFAR Compliant

Mechanical Properties

TEST	UNITS	Results
Tensile Strength	KSI	132.4
Yield Strength	KSI	112.6
% Elongation	%	11
% Reduction of Area	%	59.8
Rockwell Hardness C Scale	HRC	28
Decarb (Total)	In	0.00

NOV 08 2010



Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.
"LATEST REVISIONS OF ASTM"

Material is free of mercury, radium, or alpha contamination.

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFARS compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSSM, CSCM/CSCR	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSCM/CSCR	ASTM E572
Macroetch	CSSM, CSCM/CSCR	ASTM E381
Hardenability (Jominy)	CSSM, CSCM/CSCR	ASTM A255; SAE J406; JIS G0561
Grain Size	CSSM	ASTM E112
Tensile Test	CSSR/CSSP, CSFP, CSCM/CSCR	ASTM E8; ASTM A370
Rockwell Hardness	All labs	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSSR/CSSP, CSFP	ASTM A892
Inclusion Content (Methods A, E)	CSSR/CSSP, CSCM/CSCR	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/11.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



NOV 08 2010



WireTech
10075250

A65811

Certificate of Analysis

Radcliff Wire Inc. 97 Ronzo Rd., P.O. Box 603, Bristol, CT 06010

Date Shipped: 1/19/2011

PO #: VP105019

Qty. Shipped: 54 LBS-4-BLACK
MIG SPOOLS

Radcliff No.: 119690

Heat No.: 557040

Customer: CHERRY AEROSPACE
SANTA ANA OPERATIONS
1224 EAST WARNER AVE
SANTA ANA, CA 92705-5414

Country of Origin: USA

Original Mill Source: USA

Size: .006 X .011 X .056 ***

Material: A286 Stainless Steel

Description: SPECIAL SHAPE

Specification: AMS 5731 REV L , AMS 5737 REV P
CHEM ONLY

Chemical Properties

Al: 0.16%	B: 0.0064%	C: 0.056%	Cr: 13.8%	Mn: 0.39%
Mo: 1.17%	Ni: 24.31%	P: 0.015%	S: 0.0005%	Si: 0.17%
Ti: 2.16%	V: 0.24%			

Notes:

DFAR COMPLIANT
NET WGT 54 LBS
PART# M189.44 REV W

JAN 27 2011



Tensile: 93 KSI

Rockwell:

Certs/Material

Lisa Piatek

Certification Clerk

The material as shipped is free from mercury contamination

RADCLIFF WIRE, INC.
557040



A66345

CERTIFICATE OF TESTS

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE

CERT SERIAL# 000732871



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

12/17/10

CUSTOMER/BESTELLER/CLIENT

RADCLIFF WIRE INC
PO BOX 603
BRISTOL ,CT 06011

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING ,PA 19601

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKAUFER/VENDEURPAGE 1 OF 1

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
39391	PHL395001 L38790	12/17/10	399.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE : 557040

PRODUCT DESCRIPTION: A286 AIRCRAFT QUAL ANNEALED COLD FINISH

SIZE 0.034000 IN. (0.86 MM) RD WIRE

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

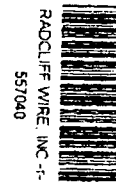
C (OES)	MN (XRF)	SI (XRF)	P (OES)	S (OES)	CR (XRF)
0.056	0.39	0.17	0.015	LT .0005	13.80
NI (XRF)	MO (XRF)	AL (OES)	TI (OES)	V (XRF)	B (OES)
24.31	1.17	0.16	2.16	0.24	0.0064

TENSILE AS SHIPPED, KSI (MPA) 121.0 (834)

MATERIAL PRODUCED ON THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. MATERIAL HAS BEEN MELTED IN USA OR QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009. CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2007 TO THE REQUIREMENTS OF ISO 9001:2000 APPROVAL CERTIFICATE 07-0869 BY PERFORMANCE REVIEW INSTITUTE. CERTIFICATE OF TEST IS PREPARED IN ACCORDANCE WITH PARAGRAPH 3.1 OF EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS.

KAY C. DANTZLER
MET RELEASE/CERT ANALYST
CARPENTER TECHNOLOGY CORPORATION

JAN 27 2011



A66345

RADCLIFF WIRE INC.
557040

Kay C. Dantzler

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification by other parties. Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keine Haftung für die angegebenen Daten oder Zertifizierungen. Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400

CHARTER STEEL TEST REPORT

Reverse Has Text And Codes

1-800-437-8789

FAX (262) 268-2570

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA-90040
Kind Attn : Cert To Contact

Cust P.O.	6500-5
Customer Part #	8740C1A060-C-R
Charter Sales Order	70010384
Heat #	10075260
Ship Lot #	4029233
Grade	8740 R SK FG AQ 1/4
Process	HRSA
Finish Size	1/4

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 10075260

TEST RESULTS OF TEST 2015-10-01-000000												
Lab Code: 7388	C	MN	P	S	SI	NI	CR	MO	CU	SN	V	
CHEM	.40	.96	.010	.014	.27	.43	.43	.22	.19	.009	.001	
%Wt												
	AL	N	B	TI	NB							
	.025	.0060	.0001	.002	.002							
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
	58	57	56	55	53	52	48	46	43	41	39	37
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	36	34	34	33	33	32	31	30	30	30	29	29

JOMINY SAMPLE TYPE ENGLISH = B JOMINY LAB = 0358-01
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .07 AMS 2301 FREQUENCY INDIVIDUAL = .13
AMS 2301 SEVERITY AVERAGE = .04 AMS 2301 SEVERITY INDIVIDUAL = .06
CHEM. DEVIATION EXT. - GREEN =

NOV 08 2010



A65811

Test Results of Rolling Lot# 1014872

REDUCTION RATIO = 616:1

Test Results of Processing Lot# 4029084, 4029233

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	1.0	85.5	85.5	85.5	TENSILE LAB = 0358-02
REDUCTION OF AREA	1	73	73	73	RA LAB = 0358-02
ROCKWELL B	1	85	85	85	RB LAB = 0358-02

NUM DECARB = 1 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 1 SPHERODIZATION = 90.0

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3010 Revision = M Dated = 12-MAR-03

Additional Comments: MEETS REQUIREMENTS OF SPECIFICATIONS AMS6322N/AMS2301J/MIL-S-6049A

Charter Steel
Saukville, WI, USA



Rem: Load1,Fax0,Mail0

Page 1 of 1

Janice Barnard
Janice Barnard
Manager of Quality Assurance
08/10/2010

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: 13229		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624521308	LINE ITEM: 1	SHIP DATE: 09/23/2010		ALLOY: K540	TEMPER: F
WEIGHT SHIPPED: 14302 lbs.	QUANTITY: 69 pcs.	B/L NUMBER: 6836	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630		

Test Code: 4000

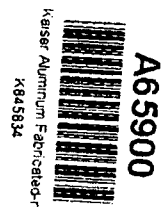
Actual Physical Properties

Lot No.

845834 0.0

Chemical Composition, WT. % (Aluminum Remainder)

Lot	Cast/Drop	ChemID	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
845834										
9-2F2	Act.		0.04	0.07	0.00	0.07	4.6	0.10	0.01	0.01
153770										
Chemical	Min					0.05	4.5	0.05		
Limits	Max		0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
		Others	Each	0.05	Max		Total	0.15	Max	



DEC 13 2010



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 11737

Kaiser Order Number: 624521308

Page 1 of 2

Line Item: 1



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
31	25	EA	AN924-6D		P00021321-21378	NELSON AEROSPCE/PERM 52930			


Jason Lewis
Vice President of Quality

03/06/14

PERMASWAGE

PERMASWAGE - Nelson Aerospace
A Designed Metal Connections, Inc. Company
10310 Norris Avenue
Pacoima, CA 91331
Ph: 818-686-0900
Fax: 818-686-0181

Pack Slip: 36874



Sales Order: 19396



Page: 1 of 1

Customer Packing Slip

Ship To:

B/E AEROSPACE CONSUMABLES MANAGEM
9835 NW 14TH ST
MIAMI FL 33172
USA

Verify AES requirements prior to shipment.

Sold To:

B/E AEROSPACE CONSUMABLES MANAG
PO BOX 025263
MIAMI FL 33102-5263
USA

Verify AES requirements prior to shipment.

Fax: 305-507-7194

Ship Date: 8/27/2012

Ship Via: FEDEX GROUND

F.O.B.: EX WORKS

Cust P.O.: OFKR49

Salesperson: JIM THOMPSON

PO Line	Planned Qty	Shipped Qty	Back Order Qty	Part Number Description	Rev	Lot Number
---------	-------------	-------------	----------------	-------------------------	-----	------------

FEDEX GRD # 0331-0149-0
REF. AN924D6

20,000

10,806

9,194.00

AN924-6D
NUT

11

F00021321-21378

Sale Order / Line / Release: 19396 / 3 / 1

Customer PO Number: OFKR49

Certificates Required:

Standard Certification: No
Full Certifications: Yes

First Article Inspection: No
Chemical/Physical: No

Material Certificate: No
FAIR per AS9102: No

1 CTN 8 LBS 8X8X8
4 CTN 25 LBS EA 10X10X10

AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00

Products listed have not been exposed to mercury or mercury compounds during the manufacturing process.

!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE -NELSON AEROSPACE SALES @ 818-686-0900 !!

WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STANDARDS ACT ON 6/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 1 1/2% PER MONTH (18% PER ANNUM).

Certification of Conformance

NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABILITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABILITY IS BASED UPON CONTRACT RIGHTS, NEGLIGENCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECEIPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH.

Manager of Quality Assurance or Designee



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


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The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
62	5	EA	NAS77A5-025		50065	ELECTRONIC HARDWARE	64961		


Jason Lewis
Vice President of Quality

03/06/14



ELECTRONIC HARDWARE LTD.
13257 SATICOY ST. NORTH HOLLYWOOD, CA 91605
P.O. BOX 15039 NORTH HOLLYWOOD, CA 91615-5039
TEL. 818-982-6100 FAX 818-764-1889
Web Site Address: www.ElectronicHardware.com
Email: Sales@ElectronicHardware.com

ELECTRONIC HARDWARE LTD
13257 SATICOY STREET
NORTH HOLLYWOOD, CA 91605
United States of America

Ph: 818-982-6100
Fax: 818-982-3539

SO Acknowledgment

Number 20072602

Date: 11/11/2013

To

ROHAN JOHNSON
B/E AEROSPACE, INC.
PO BOX 025263
MIAMI, FL 33102
United States of America

Ship To

B/E AEROSPACE, INC
9835 NW 14TH ST
MIAMI, FL 33172
United States of America

Ph: 305.716.6927

Fax: 305.640.6550

Ph:

Fax:

Terms		Shio Via		Issued By	
net 45		FED EX COLLECT		CLEON	
Quantity	Description	Unit Price	Amount		
	PO: 0TBJ94 Order On: 11/11/201: ECCN/ITAR DOES NOT APPLY...PER ERIN V. 0331-0149-0 ***** DO NOT INSURE ***** NOTHING OVER 40LBS ** **** QC ALL PARTS BEFORE SHIPPING *****				
100 /EACH	PO Line: 001 Part: NA-NAS77A5-025 NA-NAS77A5-025 REV 14 MFG: ELECTRONIC HARDWARE LTD,USA LOT# 50065 ** MAT'L & PLATING CERTS ** ** CUSTOMER PART # NAS77A5-25 ** SEE PACKING SLIP FOR C OF C ** P BY SL ALLOCATED BY SL <u>On Hand Quantity</u> 307	Ship Date: 01/20/2014 M Rev: 14 ea			
		Sales Order Total:			
	No returns may be made after 30 days. Special orders may not be returned or cancelled. There will be a restocking fee on all cancelled or returned orders for standard parts.				



ELECTRONIC HARDWARE LTD
13257 SATICOY ST. NORTH HOLLYWOOD, CA 91605
P.O. BOX 15039 NORTH HOLLYWOOD, CA 91615-5039
TEL. 818-982-6100 FAX 818-764-1889
Web Site Address: www.ElectronicHardware.com
Email: Sales@ElectronicHardware.com

ELECTRONIC HARDWARE LTD
13257 SATICOY STREET
NORTH HOLLYWOOD, CA 91605
United States of America
CAGE CODE 64961
Ph: 818-982-6100
Fax: 818-982-3539

Pack List

Number: 15911

Date: 07-Jan-14

To

B/E AEROSPACE, INC.
PO BOX 025263
MIAMI, FL 33102
United States of America

Ship To

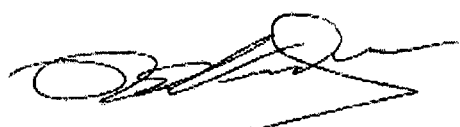
ROHAN JOHNSON
B/E AEROSPACE, INC
9835 NW 14TH ST
MIAMI, FL 33172
United States of America

Ph: 305-925-2600

Fax: 305-507-7192

Ph: 305.716.6927

Fax: 305.640.6550

Terms		Ship Via	
net 45		FED EX COLLECT	
		PrePay	
Quantity	Description	Backorder Qty	
100 EACH	Part: NA-NAS77A5-025 NA-NAS77A5-025 REV 14 MFG: ELECTRONIC HARDWARE LTD,USA LOT# 50065 ** MAT'L & PLATING CERTS ** ** CUSTOMER PART # NAS77A5-25 ** SEE PACKING SLIP FOR C OF C ** SO: 20072602	Rev: 14	
	PO: 0TBJ94 Line: 001		
<p>No returns may be made after 30 days. Special orders may not be returned or cancelled. There will be a restocking fee on all cancelled or returned orders for standard parts. WE HEREBY CERTIFY THAT PARTS PROCESSED UNDER THIS PURCHASE ORDER HAV BEEN PROCESSED IN ACCORDANCE WITH ALL APPLICABLE INSTRUCTIONS AND SPECIFICATIONS. MIL CERTS WHERE APPLICABLE PERTAINING TO THE MATERIAL US PROCESSING OF THIS ORDER ARE ON FILE IN THE MANUFACTURER'S PLANT AND AVAILABLE FOR INSPECTION</p>  <p>R.E. VUDROGOVIC, Vice President</p>			

ThyssenKrupp Materials NA

Copper and Brass Sales Division



ThyssenKrupp

ThyssenKrupp Materials NA 13338 Orden Drive Santa Fe Springs CA 90670

DELIVERY NOTE

RECEIVED
FEB 24 2012

BY: *RM*



ELECTRONIC HARDWARE
13346 SATICOY ST
NORTH HOLLYWOOD CA 91605-3406

DATE: 02/24/2012
DOC. NO: 2401718714*
ORDER NO: 1401092899
YOUR P/O: 60039568
CUSTOMER NO: 10005285
Route: C2AC2
CONTACT: Ginger M Sanchez
TEL: 562-215-4398 ext 54398
FAX: 800-926-8310 ext 8310
EMAIL: Ginger.sanchez@thyssenkrupp.com

P.O.- 0TBJ94
LOT- 50065
P/N- NAS77A5-025
REV- 14
MFG.- ELECTRONIC HARDWARE LTD.

JD "QC"

* please state on all documents

**NOTE MUST HAVE ACTUAL TR'S ON ALL PRODUCTS - EXCEPT 360 BRASS
ALL ALUMINUM ITEMS MUST BE DOMESTIC ONLY**

UNLD BY HAND: Y
UNLD BY FORK: Y
RCVG HOURS: 7-3:30 PM MON-FRI
MAX SKID WT: 2000
MAX BUNDLE WT: 2000
7-3:30 PM MON-FRI

Client: ELECTRONIC HRDWRE LTDPO BOX 15039, NORTH HOLLYWOOD, CA 91615-5039, US
We deliver at your own risk and account in accordance with our general delivery and payment terms.

ITEM	DESCRIPTION	NET QTY1 / QTY2	PACKAGE NO.
0010	CURD00209 Aluminum Silicon Bronze C64200 HR50 (drawn & stress relieved) Round 0.5625 " (+ -.003) X 144 Mill Length ASTM B 150/B 150M 2008 ROHS COMPLIANT SAE AMS 4634 A Actual Chemistry/Act. Physical Standard Packaging	10 PC 99 lb	1002309223✓

SMTN 1875
HEAT 51149
LOT

SHIP 10 BARS ONLY

Tag	Qty	UOM	Vendor	Vend PO	Heat/Lot	PCS
2000402632	10	PC	OUTOKUMPU	5400092876	51149	10

Total Gross Weight

124 lb

All items, not declared as partial delivery, are final quantities.
Delivery Terms: PPD gem. Incoterms 2000 Prepaid

REVIEWED
AND
ACCEPTED
EHL Q.C.
2

ThyssenKrupp Materials NA

Copper and Brass Sales Division



ThyssenKrupp

ThyssenKrupp Materials NA 13338 Orden Drive Santa Fe Springs CA 90670

DELIVERY NOTE

ELECTRONIC HARDWARE
13346 SATICOY ST
NORTH HOLLYWOOD CA 91605-3406

P.O.- 0TBJ94
LOT- 50065
P/N- NAS77A5-025
REV- 14
MFG.- ELECTRONIC HARDWARE LTD.

DATE: 02/24/2012
DOC. NO: 2401718714*
ORDER NO: 1401092899
CUSTOMER NO: 10005285
Route: C2AC2
CONTACT: Ginger M Sanchez
TEL: 562-215-4398 ext 54398
FAX: 800-926-8310 ext 8310
EMAIL: Ginger.sanchez@thyssenkrupp.com

* please state on all documents

PAGE 2 OF 2

CERTIFICATION OF COMPLIANCE

We hereby certify that mercury or any of its compounds are not used in the processing and distribution of our products. The products we distribute are not hazardous in their received state. For MSDS sheets go to www.copperandbrass.com. We hereby certify that the material above complies with the above specifications

Rush D. Williams - Director Quality Improvement Board

REVIEWED
AND
ACCEPTED
EHL Q.C.
2

PO: 5400 0 92876
GR: 9301 0 71225

Test report
BN 10204-3.1

LDM

Certificate Nr.:	141644		Customer: ThyssenKrupp Materials, Inc Copper and Brass Sales Inc. P.O. Box 5116 22355 W 11 Mile Road 48086-5116 SOUTHFIELD, MI U.S.A.					
Your Order:	5400092876-R05							
Our Confirmation:	82766 85699 2							
Stk. Nr.:	765788							
Chemical Analysis: according to:	C64200 AMS 4634	93-01-01	Shape and Size:	Rod Round 0.563 inch				
Mechanical Properties according to:	HR30 AMS 4634	93-01-01	Weight:	2205 lbs.				
Tolerances according to:	ASTM B249 T2 09-10-01		Date:	06/05/11				
Chemical Composition: Charge/Heat Number:	Cu %	Zn %	Pb %	Fe %	Sn %	Ni %	Al %	Mn %
51149	rem.	0.00	0.01	0.18	0.00	0.04	6.82	0.08
	Si %	As %						
	2.10	0.00						
Mechanical Properties:	1	2	3	4	5	6		
Tensile Strength	psi	99496	P.O. - 0TBJ94 LOT - 50065 P/N - NAS77A5-025 REV - 14 MFG. - ELECTRONIC HARDWARE LTD. JD "QC"					
Yield str. (EUL 0.5%)	psi	51053						
Elongation 4D	%	17.3						
Hardness Rockwell B		91						
SCC test in ammonia	AMT	passed						
Ultrasonic examination Check	AMT	passed						
Chemical Analysis		passed						
Heat treatment 650 °C / 280 min.								
Particulars: This material is also specified according to: ASTM B150 (08).								
Mercury free and no weld repair allowed.								
Chemical composition: Cu% is incl. Ag. - Ni% is incl. Co.								
<p>The products to which this declaration refers conform to the conditions and requirements of the purchaser and to the description, quantity and specification stated.</p> <p>These products have been produced under a certified quality system. The test results have been determined by our associated laboratory.</p> <p>Mr. P.A. van Ingen MBA Manager Production & Technology LDM</p>								

LDM B.V.
Lipstraal 44, 5181 RP Drunen, The Netherlands
P.O. Box 42, 5150 AA Drunen, The Netherlands

Tel: +31 416 380911, Fax: +31 416 378855
www.ldmbrass.com
Business ID 18119877, VAT 0150093801



From: Copper and Brass Sales

Cust: ELECTRONIC HARDWARE

Del: 2401718714

Part:

PO: 60039568

Wgt: 99.000 LB

Date: 02/24/2012

James K Baber



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
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Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

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FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
35	200	EA	CR3213-4-6		87447607	CHERRY AEROSPACE SAN	11815		


Jason Lewis
Vice President of Quality

03/06/14



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO321616
Order Date: 04/28/08
Print Date: 01/21/11

Page: 1



Sold-To: 10015341

**S
O
L
D
T
O**
B/E AEROSPACE
PO BOX 025263
MIAMI, FL 33102-5263
USA

Ship-To: 19000244

**S
H
I
P
T
O**
B/E AEROSPACE INC C.M.
10000 N.W. 15TH TERRACE
MIAMI, FL 33172
USA

Salesperson (s):110

Credit Terms: Net 30
Net 30

Purchase Order: 0EZ595

Ship Via: Y.R.C. PPD.

FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

Ln	Item Number	Site T LocationLot/Serial	Qty Open Qty to Ship UM	Promised Shipped
5	CR3213-4-06 Customer Item: NAS9301BNS-4-06 M7885/2-4-06 NAS9301B-4-06 S2906-4-6 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I *PREFERENCE FOR DOMESTIC SPECIALTY METALS 	1600 10502 87447607	EA 27348.0	01/16/11 ()

TEST REPORTS ENCLOSED
DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO321616
Order Date: 04/28/08
Print Date: 01/21/11

Page: 1



Sold-To: 10015341

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA



Ship-To: 19000244

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Credit Terms: Net 30
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BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

Ln	Item Number	Site T Location/Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
5	CR3213-4-06 Customer Item: NAS9301BNS-4-06 M7885/2-4-06 NAS9301B-4-06 S2906-4-6 *IF APPLICABLE, PART MEETS DFARS CLAUSE 252.225-7014 ALT I *PREFERENCE FOR DOMESTIC SPECIALTY METALS 10502 87447607	1600	27348.0	EA	01/16/11	

TEST REPORTS ENCLOSED
DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

SIM NGUYEN



CHERRY[®] AEROSPACE
SPS Fastener Division, a PCC Company



Accredited
Nadcap

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

1224 East Warner Avenue
Santa Ana, CA 92707-0157

Final Inspection & Test Report CherryMax[®] Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	87447607
CR3213-4-06	AA	PS-CMR-3000	R	Lot Size:	28,000
** See 2nd Page for the Customer Parts				MFG. Date:	January 20, 2011

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87447607	A65900	QQ-A-430/5056	MIL-C-5541 CLEAR CL1A	None
Stem	87403226	A66019	AMS6322 / 8740ST	QQ-P-416/T2CL2/CAD PL	None
Collar	00000000	A66188	A-286 / AMS5731	Passivate per AMS2700	None

W.O. #: 5425395

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D	INSTALLED SHEAR		TENSION		SPINDLE RETENTION	DISASSEMBLY
	664		285		125	10
SAMPLE SIZE	8	N/A	8	N/A	8	N/A
SPECS	C-N-M	B	C-N-M	B	C-N-M	B
RESULTS	955		394		259	40
	951		413		274	44
	1043		399		281	37
	1035		390		268	80
	1048		402		302	27
C=CR N=NAS	991		396		254	
M=MIL B=BAC	1004		397		260	
LOAD VALUES						
IN POUND	998		398		232	

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	20	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev: -
Rev. Date: 1/20/2011
Inspector
I Reyes

Q Code
V09



The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



CHERRY AEROSPACE
SPS Performance Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited

NadcapTM

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report CherryMax® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: **87447607**

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
NAS9301BNS-4-06	4	NAS1686	3
M7885/2-4-06	D	MIL-R-7885	D2
NAS9301B-4-06	4	NAS1686	3
S2906-4-6	B	MIL-R-7885	D2
S2906-4-6	B	NAS1686	3
S2906-4-6	B	PS-CMR-3000	R

KAISER ALUMINUM

SHIP TO:

CHERRY AEROSPACE LLC

VMI / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414

SOLD TO:

CHERRY AEROSPACE LLC

VM / CONSIGNMENT AGREEMENT

1224 EAST WARNER AVE

SANTA ANA, CA 92705-5414

		ULTIMATE		YIELD		% ELONGATION	
LOT NUMBER	# OF TESTS	STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K845834	3	48.83	49.92				

COMMENTS:
M005.123 REV P
QQA-430
MILL SOURCE KAISER
MADE IN USA

DEC 13 2010



7085724



A65900

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	5056		0.30		0.40		0.10	0.05	0.20	4.50	5.60	0.05	0.20	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.10										
ALUMINUM REMAINDER															

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: 13229		CUSTOMER PART NUMBER: 6Z37KH		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624521308	LINE ITEM: 1	SHIP DATE: 09/23/2010	ALLOY: K540	TEMPER: F	
WEIGHT SHIPPED: 14302 lbs.	QUANTITY: 69 pcs.	B/L NUMBER: 6836	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON AVENUE FLORENCE, AL 35630		

Test Code: 4000

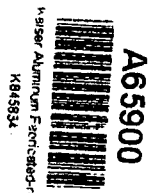
Actual Physical Properties

Lot No.

845834 0.0

Chemical Composition, WT. % (Aluminum Remainder)

Lot Cast/Drop ChemID		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
845834									
9-2F2	Act.	0.04	0.07	0.00	0.07	4.6	0.10	0.01	0.01
153770									
Chemical	Min				0.05	4.5	0.05		
Limits	Max	0.30	0.40	0.10	0.20	4.9	0.20	0.10	0.05
		Others	Each	0.05	Max	Total	0.15	Max	



DEC 13 2010



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despins, Technical Manager

John R. Despins

Plant Serial: 11737

Kaiser Order Number: 624521308

Page 1 of 2

Line Item: 1

KAISER ALUMINUM

FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Specifications

QQA-430 REV C

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).



DEC 13 2010



CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

John R. Despina, Technical Manager

John R. Despina

Plant Serial: 11737

Kaiser Order Number: 624521308

Page 2 of 2

Line Item: 1



WireTech, Inc.

6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

SOLD TO

CHERRY AEROSPACE LLC
1224 E. WARNER AVENUE
SANTA ANA, CA 92705-5414
USA

CERTIFICATION

WORK ORDER
079618

HEAT NO.
584890
SALES ORDER / RLS
837233 / 1
ISO 9001-2000 REGISTERED



MECHANICAL TESTING
CERT # 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE
VPO92778	M272.1040	2,116 Lbs	2	00087068	11/30/2010

SPECIFICATION C208740-101040A
A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating,
Size:0.103/0.105 Specifications: AMS2301H, AMS6322N, MIL-S-6049A, AMEND1, ASTM-A-547, AMS-S-6049-A, M
272.1040 REV. P.

CERTIFICATION REQUIREMENTS

Chemical Properties

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.41	.26	.94	.009	.011	.15	.44	.42	.21

Physical Properties

Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source
6 J5=55	J8=48	J10=41	S2-R1-C2	GOOD	F&S=0	Charter	

Country of Origin
USA - DFAR Compliant

Mechanical Properties

TEST	UNITS	Results
Tensile Strength	KSI	128.7
Yield Strength	KSI	109.4
% Elongation	%	5
% Reduction of Area	%	60.3
Rockwell Hardness C Scale	HRC	27
Decarb (Total)	In	0.00

DEC 06 2010



Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. *The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47.*

REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL.

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140. The reported Chemical and Physical Properties are Mill Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. *Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.

TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.
LATEST REVISIONS OF ASTM

Material is free of mercury, radium, or alpha contamination.

A66019

MAY-04-2000 10:48AM FROM-GREEN ROD DOCK

+1 282 288 2938

T-448 P.010/014 F-802



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570

Wiretech Incorporated
6440 East Canning Street
Los Angeles, CA 90040
Kind Attn : Cert To Contact

Chart P.O.	8338-2
Customer Part #	8740C1A070-C-R (2)
Charter Sales Order	291132001
Heat #	684890
Ship Lot #	570935
Grade	8740 R SK FG AQ 9/32
Preheat	HRSA
Final Size	9/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Lab Code: 7388

Test Results of Heat Lot# 584890

CHEM	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
%Wt	.41	.84	.009	.011	.28	.44	.42	.21	.18	.007	.001
	AL	N	B	TI	NB						
	.028	.007	.0001	.002	.001						

CHEM. DEVIATION EXT.-GREEN N/R =	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM11	JOM12
JOMINY(HRD)	57	57	58	55	55	52	50	48	45	41	41	39
	JOM13	JOM14	JOM15	JOM16	JOM18	JOM20	JOM22	JOM24	JOM26	JOM28	JOM30	JOM32
	38	38	36	35	34	33	32	31	29	31	30	29

JOMINY LAB = 0358-01

McQuaid-Gm Grain Size Comparison = 0-0
AMS 2301 FREQUENCY AVERAGE = 0 AMS 2301 FREQUENCY INDIVIDUAL = 0
AMS 2301 SEVERITY AVERAGE = 0 AMS 2301 SEVERITY INDIVIDUAL = 0

Test Results of Rolling Lot# 418489

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2	84.1	85.8	84.9	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	58	65	60	RA LAB = 0358-02
ROCKWELL B	2	82	84	84	RS LAB = 0358-02

NUM DECARB = 3

CP SPHERO % LAB = 0358-02 NUM SPHERO = 3 SPHEROIDIZATION = 90

Specifications:

Manufactured per Charter Steel Quality Manual Rev 8.12-08-07
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = COP 3010 Revision = M Dated = 12-MAR-03

Additional Comments:

Charter Steel
Saukville, WI, USA

Rem: Load1, Fax0, Mail0



DEC 06 2010



Janice Bernard
Manager of Quality Assurance
05/04/2008

A66019

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSMD	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSR/D/CPD	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	P4	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSC	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
358.05	128003	CSDT	Charter Steel Detroit	23860 Sherwood Ave. Center Line, MI 48015
.	.	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Possible Laboratory	Specification
Chemistry Analysis	CSMD, CSC	ASTM E415; ASTM E1019
X-ray Fluorescence Stainless and Alloy Steel	CSC	ASTM E572
Macroetch	CSMD, CSC	ASTM E381
Hardenability (Jominy)	CSMD, CSC	ASTM A255; SAE J406; JIS G0561
Grain Size	CSMD	ASTM E112
Tensile Test	CSR/D/CPD, P4, CSC, CSDT	ASTM E8; ASTM A370
Rockwell Hardness	CSMD, CSR/D/CPD, P4, CSC, CSDT	ASTM E18; ASTM A370
Microstructure (spheroidization)	CSR/D/CPD, P4	ASTM A892
Inclusion Content (Methods A, E)	CSR/D/CPD, CSC	ASTM E45

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/09.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers
 - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Purchase Order number) to the customer's purchase order. Both Purchase Order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.



DEC 06 2010

A66019



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0301082 Page: 1
Order Date: 12/18/06
Print Date: 07/12/07



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	M&M AEROSPACE HARDWARE PO BOX 025263 MIAMI, FL 33102-5263 USA
----------------------------	--

S H I P T O	M&M AEROSPACE HARDWARE 10000 N.W. 15TH TERRACE MIAMI, FL 33172 USA
----------------------------	---

Salesperson (s):110

Purchase Order: 0AS898

Credit Terms: 1%10,30
1%10, Net 30

Ship Via: Watkins
FOB: Origin

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP WATKINS MOTOR LINE ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

Ln	Item Number	Site		Qty Open		Promised
		T	Location/Lot/Serial	Qty to Ship	UM	
1	CR9162-4-08		1600		EA	06/07/07
	Customer Item: MS20601AD4W8					
		J0503	86844202	13000.0	()	

**TEST REPORTS
ENCLOSED DO
NOT DESTROY**

Packing List



CHERRY®
AEROSPACE

SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: S0301082 Page: 1
Order Date: 12/18/06
Print Date: 07/12/07



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	M&M AEROSPACE HARDWARE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	M&M AEROSPACE HARDWARE
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s): 110

Purchase Order: 0AS898

Credit Terms: 1%10, 30
1%10, Net 30

Ship Via: Watkins
FOB: Origin

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP WATKINS MOTOR LINE ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
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BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

Ln	Item Number	Site		Qty Open		Promised
		T	Location/Lot/Serial	Qty to Ship	UM	
1	CR9162-4-08		1600		EA	06/07/07
	Customer Item: MS20601AD4W8					
		J0503	86844202	13000.0	()	

REPORTS
ENCLOSED DO
NOT DESTROY

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications, Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Quality Assurance Representative

Signed

Sim Nguyen

SIM NGUYEN


An ISO9001 and AS9100 registered company

Final Inspection & Test Report Cherry® Rivet

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	86844202
CR9162-4-08	L	MIL-R-7885	D2	Lot Size:	13,200
				MFG. Date:	July 10, 2007

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	86737839	A53986	2117-T4 ALUM. ALLOY	MIL-C-5541	Par-90
Stem	86822412	A54690	2017-T4 ALUM. ALLOY	MIL-C-5541	Par-90

W.O. #: 12180063

Final Lube: HOT WAX

MECHANICAL STRENGTH TES

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	370		15	
	9		9	
			UnLocked	
RESULTS	526	533	49	62
	569		42	
	569		41	
	528		62	
	532		63	
	569		52	
LOAD VALUES IN POUNDS	572		44	
	579		60	

METALLURGICAL AND OTHER RELATED TESTS/REQUIREMENT

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
125	EXAMINATION	PASS	13	INSTALLATION (Min and Max Grips)	PASS
	Locking feature (missing collar/spindle)			Spindle Protrusion/Recession	
	Visual (grip/material code, ID)			Collar Protrusion	
	Laps, seams, folds			Blind Head Dia./Formation	
32	Roundness/Concentricity	PASS		Tightness in plate	
	Dimensional, ID Marks, Tool Marks/Nicks				

Comments:

Blind Fastener

Tr. Rev.:	-
Rev. Date:	7/10/2007
Inspector	M Garcia
Insp. Control #:	260899



Cherry Aerospace LLC certifies that the product tested above conforms to all referenced specifications listed and that the original data are available for review upon sufficient notice. Cherry Aerospace LLC further certifies that the articles listed above have been manufactured and inspected in accordance with FAA TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Substitution of parts may only be done if acceptable to or approved by the FAA Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.

The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.

CHERRY® AEROSPACE LLC

1224 East Warner Avenue
Santa Ana, CA 92707-0157



An ISO9001 and AS9100 registered company

Final Inspection & Test Report
Cherry® Rivet

Lot I.D. No.: 86844202

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20601AD4W8	-	MIL-R-7885	D2

KAISER ALUMINUM
& CHEMICAL CORPORATION

CERTIFIED TEST REPORT
600 KAISER DRIVE HEATH, OH 43086

SHIP TO

NICHOLS WIRE INC.
1547 HELTON AVE

FLORENCE

AL 35630

NICHOLS 9691 D1 8000 D I NSP404

SOLD TO

NICHOLS WIRE INC.
1547 HELTON AVENUE
ATTENTION: AMANDA SOUTH

FLORENCE

AL 35630

MADE IN USA

CUSTOMER PURCHASE ORDER NO. & ITEM 11680				KAISER ORDER NO. 214464612	
ALLOY 2117	CLAD.	TEMPER O	GUAGE .37500	WIDTH 00.0000	LENGTH 000.000
ITEM ORDERED ALY-JUMBO					
CUSTOMER SPECIFICATION					
PART NUMBER 6G37L1		BL NUMBER 9691		DATE SHIPPED 10/16/06	
WEIGHT SHIPPED 40,698		NO. OF PIECES 182		GOVT. CONTRACT NO.	

CERTIFICATION

KAISER ALUMINUM & CHEMICAL CORPORATION (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER HAS BEEN INSPECTED AND TESTED AND FOUND IN CONFORMANCE WITH THE APPLICABLE SPECIFICATIONS FORMING A PART OF THE DESCRIPTION SET FORTH IN KAISER'S SALES ORDER ACKNOWLEDGEMENT FORM. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS & CONDITIONS OF SALE.

John Despi *John Despi*
Technical Manager

LOT NUMBER	NO. OF TESTS	WGU							
839089	3	MIN	22.5						
		MAX	22.5						
55-8F2	2	Cu	Fe	Si	Mn	Mg	Zn	Cr	
		2.9	.41	.46	.16	.37	.19	.07	
839090	2	MIN	22.0						
		MAX	22.5						
53-1F2	2	Cu	Fe	Si	Mn	Mg	Zn	Cr	
		2.7	.39	.32	.17	.36	.12	.06	

NICHOLS WIRE INC.
A53986

MAR 03 2007

CHEMICAL COMPOSITION (WT.%)

	Cu	Fe	Si	Mn	Mg	Zn	Cr	Others Each	Others Total	
MIN	2.2				0.20					
MAX	3.0	0.7	0.8	0.20	0.50	0.25	0.10	0.05	0.15	

ALUMINUM REMAINDER


NICHOLS WIRE, INCORPORATED

1547 Helton Drive - Florence, AL 35630

SOLD TO:

CHERRY AEROSPACE LLC
1224 EAST WARNER AVENUE
P. O. BOX 2157
SANTA ANA, CA. 92707-0157

**CHERRY AEROSPACE LLC
ATTN ACCTS PAYABLE
P. O. BOX 2157
SANTA ANA, CA. 92707-0157**

CUSTOMER PURCHASE ORDER NO. PO81817				NW WORK ORDER NO. 06163				 AUTHORIZED SIGNATURE QUALITY CONTROL MANAGER			
DESCRIPTION .0980 2017 T37 22" CL								We hereby certify that the material covered by this report has been inspected in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown on this sheet.			
FINISH											
CUSTOMER PART NO.				ALLOY 2017		TEMPER T37					
NW PART NO. D098Z2						DATE SHIPPED 05/03/2007					
WEIGHT SHIPPED 209 lb											
			ULTIMATE		YIELD		SHEAR		% ELONGATION		
LOT NUMBER	# OF TESTS		STRENGTH K.S.I.		STRENGTH K.S.I.		STRENGTH K.S.I.				
			MIN	MAX	MIN	MAX	MIN	MAX			
K-839685	1		76.7	76.7	0.0	0.0			0.00		

COMMENTS:

M051 .098 REV H
MILL SOURCE KAISER
MADE IN USA
QQA-430

MAY 14 2007

44-38861-1000

A54690

C H E M C O M P	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
	2017	0.2000	0.8000	0.0000	0.7000	3.5000	4.5000	0.4000	1.0000	0.4000	0.8000	0.0000	0.1000	0.0500	0.1500
		NICKEL		ZINC		TITANIUM									
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
		0.0000	0.0000	0.0000	0.2500	0.0000	0.1500								
ALUMINUM REMAINDER															

**KAISER ALUMINUM
& CHEMICAL CORPORATION**

CERTIFIED TEST REPORT
600 KAISER DRIVE HEATH, OH 43056

**SHIP
TO**

NICHOLS WIRE INC.
1547 HELTON AVE

FLORENCE

AL 35630

**SOLD
TO**

NICHOLS WIRE INC.
1547 HELTON AVENUE
ATTENTION: AMANDA SOUTH

FLORENCE

AL 35630

NICHOLS 1804 01 8000 D I NSP404

MADE IN USA

CUSTOMER PURCHASE ORDER NO. & ITEM 11890			KAISER ORDER NO. 214475825		
ALLOY 2017A	CLAD.	TEMPER O	GUAGE .37500	WIDTH 00.0000	LENGTH 000.000

ITEM ORDERED
ALY-JUMBO

CUSTOMER SPECIFICATION

KAISER ALUMINUM & CHEMICAL CORPORATION (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER HAS BEEN INSPECTED AND TESTED AND FOUND IN CONFORMANCE WITH THE APPLICABLE SPECIFICATIONS FORMING A PART OF THE DESCRIPTION SET FORTH IN KAISER'S SALES ORDER ACKNOWLEDGEMENT FORM. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS & CONDITIONS OF SALE.

CERTIFICATION

John Despi
Technical Manager

PART NUMBER 6037L1		BAL NUMBER 1804	DATE SHIPPED 01/19/07
WEIGHT SHIPPED 39,444	NO. OF PIECES 175	GOVT. CONTRACT NO.	

LOT NUMBER	NO. OF TESTS		WGE	WGU						
839685	3	MIN	28.0	26.6						
		MAX	28.0	26.9						
99-1F2	4.1	Cu	Fe	Si	Mn	Mg	Zn	Cr	Zr	Ti
			.30	.38	.6	.6	.21	.04	.003	.02
839686	3	MIN	28.0	25.6						
		MAX	28.0	26.5						
3-1F2	3.9	Cu	Fe	Si	Mn	Mg	Zn	Cr	Zr	Ti
			.28	.37	.6	.6	.17	.02	.002	.02

MAY 14 2007

NICHOLS WIRE INC
K-180485

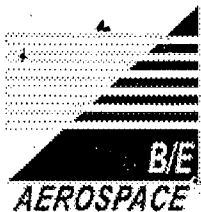


A54690

CHEMICAL COMPOSITION (WT.%)

	Cu	Fe	Si	Mn	Mg	Zn	Cr	Zr	Ti	Others	Others
MIN	3.5		.20	.40	.40			Zr+Ti	Zr+Ti	Each	Total
MAX	4.5	.7	.8	1.0	1.0	.25	.10	.25	0.25	.05	.15

ALUMINUM REMAINDER



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: P023216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
11	25	EA	AN310-4		0502115-490	GREER STOP NUT / SPS 27687			


Jason Lewis
Vice President of Quality

03/06/14

GREER STOP NUT

PS 481 McNALLY DRIVE - NASHVILLE, TN 37211
TECHNOLOGIES

PACKING LIST

PREVENT FRAUD

Any alteration or misuse of this certificate, or any unauthorized rework or modification of the identified products voids all manufacturer's warranties, and may lead to civil damages and/or criminal penalties.

CUSTOMER NBR 01-0001-00427568-0001

B/E AEROSPACE CONSUMABLES
MANAGEMENT
9835 NW 14TH ST.
MIAMI, FL 33172

THE PRODUCTS THAT ARE COVERED BY THIS AGREEMENT ARE OF U.S. ORIGIN OR OTHERWISE SUBJECT TO U.S. EXPORT AND OTHER FOREIGN TRADE CONTROLS. THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS TO OTHER COUNTRIES OR PARTIES MAY REQUIRE THE PRIOR APPROVAL OF THE U.S. GOVERNMENT. DIVERSION OF THESE PRODUCTS FROM THE AUTHORIZED DESTINATION CONTRARY TO U.S. AND INTERNATIONAL LAW IS PROHIBITED. THE PURCHASER AGREES TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES, OTHER RELEVANT JURISDICTIONS, AND PERTINENT INTERNATIONAL ORGANIZATIONS PERTAINING TO THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS. ANY VIOLATIONS OF THIS CLAUSE, AS DETERMINED SOLELY BY SPS TECHNOLOGIES AND OR GREER STOP NUT, SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.

CLAIMS FOR GOODS MUST BE MADE ON RECEIPT OF GOODS. NO MATERIAL ACCEPTED FOR RETURN WITHOUT OUR PERMISSION.

PUBLISHED 05/29/13

ORDER NBR 081985-001

ORDER DATE 09/28/12

P/S # 081985001

PAGE 1

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 33102-5263

CUSTOMER P.O.		TERMS		SHIP FROM	SCHEDULE DATE				
OKT80		N	NET 30 DAYS	AI	05/29/13	ED # OKT80			
CARRIER CD/DESC		CARRIER NBR		FREIGHT		REG	TERR	CREP	REQ. DATE
TERK ANY TRUCKING ITEM				COLLECT		2751	52	0103	09/28/12
LNE	PRODUCT CODE	DESCRIPTION		ALTERNATE CODE		QUANTITY	UM	UNIT PRICE	ACT QTY

001 0502115

AN310-4 AN310-4
UNDER 150# SHIP FEDEX GROUND ACCT
#0331-0149-0 MARK COLLECT
OVER 150 LBS SHIP FED EX NATIONAL LTL
ACCT #081757
SHIPPING BOX WEIGHT LIMIT 40 LBS
CHEMICAL AND PHYSICAL CERTS
SHIP VARIANCE +/- 10%
TOTAL QUANTITY- 125000
ROHAN JOHNSON/FGH

125000 C

5/29/13

133,343

LOT NO.	QUANTITY	AREA	WEIGHT	BOXES	PREPD	COLL	CARRIER	BILL OF LADING	FREIGHT CHARGE
0502115-470	43,345	3D3	18010	124		X	Fed Ex		
0502115-500	44,630	4E4							
0502115-490	40,368	4D5							

All parts are shipped free of mercury contamination. All damages exceeding price are excluded.

GREEN NYLON INSERT is a registered trademark of GREER STOP NUT

TR FREIGHT RECORD

3003 REV. 8/11

**GREER STOP NUT**

Greer Stop Nut
481 McNally Drive
Nashville, TN 37211

Phone: 615-832-8375
Fax: 615-331-5070
E-mail: greer@spstech.com

CERTIFICATE OF CONFORMANCE

Date of Certification: May 29, 2013

Sold To: B/E Aerospace Consumables Management
9835 NW 14th St
Miami, FL
33172

Purchase Order No: OKTR80

Customer Part No: AN310-4 Rev. 10 & NASM310 Rev. 1

Item No: 001

Greer Part No: F22SC310-0428 Nomenclature: Nut, Plain, Castellated

Lot No/Serial No: 0502115-490 (Ref. 0502116-10R) Qty. Manufactured: 47,588 Qty. Shipped: 40,868

Manufacturing Date: 4-23-13

Material: 1137 Material Specification: AMS 5024H, ASTM A108-07 Material Supplier: Nelsen Steel Company

Mill Heat No: 20216060 Greer Steel Date: CJ644J

Procurement Spec: FF-N-836E Threads: MIL-S-7742 Rev. D Am. 1

Proof Load: 4,080 lbs. Tested To: 4,080 lbs. Sample Size: 5

Non-Destructive Testing: Magnetic Particle Inspection Specification: ASTM E-1444-11 Sample Size: 29
Magnetic Particle Inspection in accordance with MT2000 Rev. 14 DTD 5-31-12 as modified by MT69811 Rev. 5 DTD 5-5-10

Surface Finish: Cadmium & Yellow Chromate Specification: AMS-QQ-P-416 Type II Class 2 Rev. C

The products identified on this certificate have been manufactured, tested and inspected in accordance with, and unless noted above, conforms in all respects to the applicable drawings, specifications and/or standards. Complete reports of physical and chemical tests are on file for on-site examination. If no specified customer quality level is required, goods conform to seller's quality level. Reproduction except in full is strictly prohibited without written approval of Greer Stop Nut. All damages exceeding price are excluded. Mercury free clause: We certify that no possibility exists for mercury contamination to occur during manufacture, assembly or testing of parts on this contract. This document relates only to the items tested. Parts were manufactured in the United States of America. Sample plans are carried out to current standard/specification revision.

G and Green Nylon are Trademarks of Greer Stop Nut

Fran Glover
Quality Assurance Coordinator



Nelsen Steel Company
9400 W. Belmont Ave.
Franklin Park, IL 60131-2898
Tel: (847) 671-9700 Fax: (847) 671-6833

PRODUCT CERTIFICATION

HEAT-LOT NUMBER 20216060 WORK ORDER 215347

SUPPLIER Charter Steel SALES ORDER / RLS 095673 / 4

MELT SOURCE/NAFTA

Charter Steel / Yes

COUNTRY OF ORIGIN

U.S.A.

CAST METHOD

Strand (Billet)

SOLD TO

Greer Stop Nut Inc.
481Mc Nally Drive
Nashville, TN 37211
USA

RECEIVED
C32441

K.S. 8/23/12

CUSTOMER P.O. 0012174652	CUSTOMER PART 0r23043	QUANTITY 9,865 LBS	COILS 3	LADING NO 00048813	SHIPMENT DATE 08/20/2012				
<p>SPECIFICATION C04340H1137 .4340, Shape = Cold Drawn Hexagon, Grade = 1137, Length = 12' R, Grain Prac = Coarse Grain Practice, Silicon = .10 MAX, Restrictd Chemistry = Charter Steel Only, Quality Level = STD, Testing = Mag Tested, Mechanical Tests, AMS 5024 Chem & Mech Only, Bundle max = 4000 lbs. Min. Red. Ratio 68:1</p>									
<p>CERTIFICATION REQUIREMENTS AMS 5024H Chem and Mech. Only</p>									
Chemical									
C .39	Mn 1.41	P .008	S .111	Si .08	Cu .12	Ni .05	Mo .01	Cr .08	Te -----
Al .001	Cb .001	N -----	Sn -----	V .001	Ti -----				
Mechanical									
TEST	UNITS	HIGH	LOW	AVERAGE					
Tensile	PSI	137000	137000	137000					
Yield Strength	PSI	113000	113000	113000					
Elongation in 2"	%	14	14	14					
Reduction of Area	%	49	49	49					
Brinell Hardness	Brin Hds	247	247	247					
<p>We certify that the above material during its processing or while in our possession was not exposed to mercury or any other metal alloy that is liquid at ambient temperature, that no welding or weld repair was performed on said material, that no Class I or Class II ozone depleting chemicals (ODC's) were used in the manufacture of said material or in any of its components or packaging, and that the finished product described herein was manufactured by Nelsen Steel and Wire L.P. and/or its agents in the United States of America. We further certify that all material cold drawn by Nelsen Steel and Wire L.P. meets or exceeds the requirements of ASTM A108-07 (Level 1) and/or SAE J403 for carbon steels and/or SAE J404 for alloy steels and their referenced documents (including ASTM A29-11a and ASTM A576-90b, 2006) as a minimum. Also, all chemical and mechanical testing is performed by laboratories that have received or have applied for certification to ISO/IEC 17025-1999. Nelsen Steel's Quality Management System is registered to ISO 9001: 2008 via third party assessment. Manufactured in the United States of America.</p>									
End of Certification									

We certify that the above metallurgical report of chemical analysis and/or mechanical properties is a true and correct statement of the information relating to the product(s) listed above and conforms to the applicable specifications as indicated on your order. WE FURTHER CERTIFY that the material described herein was monitored and controlled during manufacture in accordance with the "Nelsen Steel Company Quality Assurance Manual" in its most recent revision prior to our issuing date shown.

Certification given and subscribed

by: K.A. Koeppel
Kenneth A. Koeppel, Quality Manager



CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL

1658 Cold Springs Road
Saukville, Wisconsin 53080

(262) 268-2400

1-800-437-8789

FAX (262) 268-2570

CHARTER STEEL TEST REPORT Reverse Has Text And Codes

Nelsen Steel Co.
9400 Belmont Ave.
Franklin Park, IL-60131
Kind Attn: Ken Koeppl

CUSTOMER	55645
CUSTOMER PART	H05312R1137
CHARTER PART	70033937
Part	20216060
SHIP TO	2033242
ROLL	1137 R CGP CG FMQ 17/32
PROCESS	HR
FINISH SIZE	17/32

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side, and that it satisfies these requirements.

Test Results of Heat Lot# 20216060											
Lab Code: 125544	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
CHEM	.39	1.41	.008	.11	.08	.05	.08	.01	.12	.008	.001
%WT											
	AL	N	B	TI	CA	NB	SB	AS	PB		
	.001	.0070	.0001	.001	.0018	.001	.002	.005	.002		
JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	58	54	50	40	33	28	27	26	25	24	21
	JOM14	JOM16									
	21	20									

JOMINY SAMPLE TYPE ENGLISH - C DI = 1.73
CHEM. DEVIATION EXT. - GREEN *

# of Tests	Test Results of Rolling Lot# 2033242		Mean Value
	Min Value	Max Value	
NUM DECARB = 1			
AVE DECARB = .003			
REDUCTION RATIO = 221:1			

Specifications:

Manufactured per Charter Steel Quality Manual Rev 9.08-01-08
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = 1137-512 Revision = 5 Dated = 08-AUG-11

Additional Comments:

Charter Steel
Cuyahoga Heights, OH, USA



Page 1 of 1

This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Janice Barnard
Manager of Quality Assurance
07/25/2012

Rem: Equip, FaxQ, MailQ

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/CSSP	Charter Steel Rolling/Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
		--	Subcontracted test performed by laboratory not in Charter Steel system.	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

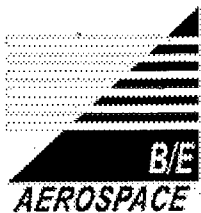
Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G056	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
Inclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
 - It may be distributed only to their customers.
 - Both sides of all pages must be reproduced in full.
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specification, the results on the front of this test report conform to that specification unless otherwise noted on this test report.





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	600	EA	MS27039C1-08		65918	MAC FASTENERS	0RFT4		


Jason Lewis
Vice President of Quality

03/06/14

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List**Bill** B/E AEROSPACE CONSUMABLES MGMT

To: 10000 NW 15TH TERRACE
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT

To: 9835 NW 14th Street
Miami, FL 33172
United States

Shipment No: 59306
Shipment Date: 06/20/13
Ship Via: United Parcel Service
Order Number: 46949
Order Date: 12/03/12

Customer Code: BE AEROSPACE
Phone: (305) 925-2600
PO Number: 0LTJ29
Terms: Net 30 Days

LOT #65918

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
2	100,000	148,500	0		M	MS27039C1-08 Screw machine pan head structural cross recessed A286 material	65918

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0LTJ29

PART NUMBER: MS27039C1-08

REV: 3

LOT NUMBER: 65918

MANUFACTURED QUANTITY: 148,500

MILL HEAT NUMBER: 45FM

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 06/19/13


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0LTJ29	MFG QUANTITY 148,500	DATE 06/19/13
PART NUMBER MS27039C1-08	REV 3	LOT NO 65918	PROCUREMENT SPEC NASM7839

MATERIAL TYPE A286				MATERIAL SPECIFICATION AMS5731/AMS5737				MILL HEAT NUMBER 45FM			SUPPLIER BRWN PAC		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.024	.09	.23	.014	.0003	.07	24.58	14.60	1.18	.21	.006	56.62	.20	2.08
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
	.05		.00001	.0001									

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
4,380	4,380
4,420	4,390
4,400	4,380
4,410	4,400
4,390	4,400
4,410	
4,400	
4,400	
MIN. REQ. 2500	

DOUBLE SHEAR STRENGTH POUNDS / PSI
TOO SHORT TO TEST PER NASM1312-13
MIN. REQ.

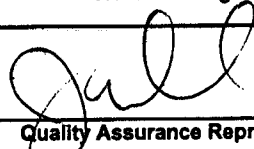
HARDNESS	
ROCKWELL "C" SCALE	
REQ.	24 - 37 HRC
SAMPLE SIZE	13
ACTUAL RESULTS 36-37 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection System <input type="checkbox"/> 21 System <input checked="" type="checkbox"/> 22 System <input type="checkbox"/> 23 FED-STD-H28/20 - ASME B1.3			

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


 Quality Assurance Representative
AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 06/19/13

PO NUMBER: 0LTJ29

MANUFACTURED QUANTITY: 148,500

LOT NUMBER: 65918

MATERIAL: TYPE A286

PART NUMBER: MS27039C1-08

REVISION: 3

REQUIRED HARDNESS: 24 - 37 HRC

SAMPLE SIZE: 13

HARDNESS: 36-37 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

DE TRAY

Plating Works

Specialized Electro-Plating and Polishing
Nickel
Copper
Decorative Chrome
Satin Chrome
Zinc
Cadmium
Passivate
Bright Dip
Strip Copper
Descale

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@aol.com

Passivate Treatment per QQ-P-35C/SAE AMS QQ-P-35/AMS 2700

CUSTOMER: Mac Fasteners Lot#: 65918
PART NUMBER: MS27039C1-08
PROCUREMENT SPECIFICATION: n/a
OTHER CONTRACTURAL REQUIREMENTS:
MATERIAL: A286
QUANTITY: 920 lbs
INVOICE NUMBER: 170730

Certification Statement:

We certify that the above referenced lot was processed, tested, and inspected in accordance with QQ-P-35C/SAE AMS-QQ-P-35, AMS2700 and part standard.

DE TRAY PLATING WORKS

NAME: James V. Liscio

JOB TITLE: VICE-PRESIDENT

DATE: 6/17/2013



BROWN-PACIFIC, INCORPORATED
13639 BORA DR. / SANTA FE SPRINGS / CALIFORNIA 90670
(562) 921-3471 • (562) 921-7012 FAX

MATERIAL TEST REPORT

F.O.B. SFS		SHIP VIA TDLogistics	JOB NO.	INVOICE NO. -0- 78239
SHIP TO SOLD TO	MACFASTENERS, INC. 1110 ENTERPRISE STREET OTTAWA, KS 66067		ORDER DATE 09/28/12	THIS MATERIAL WAS MANUFACTURED AND TESTED IN CONFORMANCE WITH THE NOTED SPECIFICATIONS. THE INFORMATION PRESENTED HEREIN IS CORRECT AS CONTAINED IN THE COMPANY RECORDS. FACILITY IS MERCURY & RADIOACTIVE FREE. BY: <i>[Signature]</i> G. MORENO, LAB 4/30/2013 GM DFAR 252.225-7014 ALT. 1 COMPLIANT KNOWINGLY OR WILLFULLY RECORDING FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL LAW, TITLE18, CHAPTER 47.
			CUST. P.O. NO. 78285	
			DUE DATE 04/30/13	
			6COILS 2652 #	
PRODUCT ORDERED		QTY. ORDERED		
0.328 DIA TYPE A-286 CONVERTED TO 0.1876/0.1886 DIA SEAMSAFE MIRAFLEX COATED COIL		2500		

SPECIFICATIONS
CAP OF 5853C 5731L 5737P

GRADE A-286	MILL NO. 18	HEAT NO. 45FM
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CHEMICAL ANALYSIS

C: .024	AL: .20
MN: .23	TI: 2.08
P: .014	B: .006
S: <.0003	CB:
SI: .09	TA:
NI: 24.58	CB+TA:
CR: 14.60	CU: .07
MO: 1.18	SE:
CO: .05	N:
V: .21	FE: 56.62
CA:	PB: <.0001
MG:	BI: <.00001
ZR<.01	

ASTM GRAIN SIZE: 7/8

ALLVAC, USA

MACRO:

MICRO:

OTHER:

MECHANICAL PROPERTIES AND CAPABILITY

AS SHIPPED PROPERTIES	TENSILE, KSI	106.1	YIELD, KSI	% ELON
	% RA		HARDNESS	SHEAR, KSI
ETT °F	TENSILE, KSI	YIELD, KSI	% ELON	% R.A.
STRESS RUPTURE	TEMP °F	1200F	STRESS, KSI	65
	TEMP °F	1200F	STRESS, KSI	70
H.T. PROCEDURE				
1650F 2HRS W/Q, 1325F 16HRS A/C				
	TENSILE, KSI	163.4	YIELD, KSI	109.7
	% R.A.	56.0	HARDNESS	RC 33
H.T. PROCEDURE				
1800F 1HR W/Q, 1325F 16HRS A/C				
	TENSILE, KSI	160.5	YIELD, KSI	102.0
	% R.A.	55.5	HARDNESS	RC 30
H.T. PROCEDURE				
1250F 8HRS A/C				
	TENSILE, KSI	175.0	YIELD, KSI	138.9
	% R.A.	55.3	HARDNESS	RC 31

Traveler(s)
75828 A

Heat #
45FM

Ingot#

CERTIFICATE OF TEST

Page 1 of 6

ATI Allvac
4374 Lancaster Highway
Richburg, SC 29729
Phone (803) 789-3595

Prof 1 Rev 0

Customer Name
BROWN PACIFIC INC.
13639 Bora Drive
Santa Fe Springs, CA

Purchase Order
M2695C-301

Size Alloy
.328" Rd. A-286

PCS
36

Weight
33035 lbs

Tina Coletti

Date: 03/04/2013 Quality Auditor: Tina Coletti

CONDITION SHIPPED

SURFACE: Hot Rolled; Descaled

HEAT TREAT: Mill Annealed / Direct Quenched

SPECIFICATIONS

S-400	10/15/2012	S-4001	06/18/12
-------	------------	--------	----------

Capability: AMS 5731 Rev. L
Chemistry only: AMS 5853 Rev C
Capable of: AMS 7235 Rev. D

HEADER REMARKS

AMS 5732 Rev J
CS0T35 Rev 84 AM7

AMS 5734 Rev K
ASTM A-453 Rev 2011 Type 690

AMS 5737 Rev P

	CHEMISTRY										
	C	S	Mn	Si	Cr	CR EQ	Mo	Co	Ti	Al	B
HEAT AVG	.024	<.0003	.23	.09	14.60	-	1.18	.05	2.08	.20	.006

CR EQ = Chromium Equiv

Cb = Nb

Zr

<.01

Traveler(s) Heat # Ingot#
 75828 A 45PM ATI Alvac 4374 Lancaster Highway Richburg, SC 29729 Phone (803) 780-3595 Page 2 of 6

	Fe	Cu	Ni	P	Cb	Ta	W	V	Cb+Ta	Ti+Al	Ni+Co	Y
HEAT AVG	56.62	.07	24.58	.014	.02	<.01	.06	.21	.02	2.28	24.63	-

CHEMISTRY (TRACE)

	Bi	Ca	Pb	Se	Ag	Sb
HEAT AVG	-	-	-	-	-	-
LADLE AOD	<.00001	<.0010	<.0001	<.00005	.0001	.0005

CHEMISTRY METHOD

ELEMENTS TESTED BY METHOD

WET-PB	PB
WET-BI	BI
WET-SE	SE
WET-SB	SB
OES-CA	CA
OES-AG	AG
CS-CS	C,S
OES-B	B

CHEMISTRY REMARKS

Chemistry tested at ATI ALLVAC unless otherwise noted.

CHEMISTRY ANALYTICAL METHODS

CS = Combustion/IR Detection

GAS = Inert Gas Fusion

OES = Spark Optical Emission

XRF = X-Ray Fluorescence

WET = Graphite Furnace Atomic Absorption (Se) and Mass Spectroscopy (Pb,Bi,Sb)

		Capability					Tensile Test							
Operation	Ingot	Heat Treat Code	Test Dir	Temp F	UTS ksi	2% Yield ksi	.02% Yield ksi	%EL		%RA	Gage Length		Tensile Diameter	Tested At
								4D	5D		4D	5D		
		1650EK	LC	ROOM	163.4	109.7		28.1		56.0	.64		.1618	WESTMORELAND
		1800MB	LC	ROOM	160.5	102.0		28.1		55.5	.64		.1612	WESTMORELAND
		48A	LC	ROOM	93.1								.329	ACUREN

Test Dir: L = Longitudinal, T = Transverse, ST = Short Transverse, LT = Long Transverse,
 TC = Transverse Center At Size, TM = Transverse Mid-Radius At Size,
 PC = Pancake, DB = Drawbar, PD = Paddle, TT = Top Transverse At Size,
 BT = Bottom Transverse At Size, LC = Long Center, TX = Top Transverse Mid-Radius At Size,
 LM = Longitudinal Mid Radius, LS = Longitudinal Surface, TS = Transverse Surface
 Operation: SUPER = Crosshead Sep Rate of .10 inches/minute

		Capability				Stress Rupture																Bar	Type
Ingot#	Heat Treat Code	Test Dir	Temp F	Load Ksi	Life Hrs	Upid1 Ksi	Life Hrs	Upid2 Ksi	Life Hrs	Upid3 Ksi	Life Hrs	Upid4 Ksi	Life Hrs	Upid5 Ksi	Life Hrs	Upid6 Ksi	Life Hrs	Upid7 Ksi	Life Hrs	%EL 4D 5D	%RA	Diam	Bar
	1650EK	LC	1200	85	48	70	63	75	88.7	-	-	-	-	-	-	-	-	-	-	16.6	28.8	.1606	CSN
	Notch Radius = .0045	BAR RUPTURED IN THE SMOOTH SECTION														Tested At		WESTMORELAND					
	1800MB	LC	1200	70	48	75	63	80	71.0	-	-	-	-	-	-	-	-	-	-	15.6	20.3	.1800	CSN
	Notch Radius = .0045	BAR RUPTURED IN THE SMOOTH SECTION														Tested At		WESTMORELAND					

Test Dir: L = Longitudinal, T = Transverse, ST = Short Transverse, LT = Long Transverse, TC = Transverse Center at size, TM = Transverse Mid-Radius At Size,
 PC = Pancake, DB = Drawbar, PD = Paddle, TT = Top Transverse At Size, BT = Bottom Transverse At Size, LC = Long Center, TX = Top Transverse
 Mid-Radius At Size, LM = Longitudinal Mid Radius, LS = Longitudinal Surface, TS = Transverse Surface
 Type Bar: TSR = Smooth, CN = Center Notch, CSN = Combination Smooth and Notch

		CAPABILITY		HARDNESS
Ingot	Heat Treat Code	Hardness val	Hardness Type	Tested At
	1650EK	33	HRC	ACUREN
	1800MB	30	HRC	ACUREN
	48A	26	HRC	ACUREN

Traveler(s) Heat # Ingot#
75828 A 45PM

ATI Allvac 4374 Lancaster Highway

Richburg, SC 29729

Phone (803) 789-3595

Page 4 of 6

TENSILE/STRESS RUPTURE HEAT TREATMENT

HT Code: 1650EK				Furnace	Cool Code
Location	Temp	Hours	Mins	Cool Rate	
	F			Per Hrs (F)	
PLANT MILL ANNEALED / DIRECT QUENCHED					
LAB	1650	2			WQ
LAB	1325	16			AC

HT Code: 1800MB				Furnace	Cool Code
Location	Temp	Hours	Mins	Cool Rate	
	F			Per Hrs (F)	
PLANT MILL ANNEALED / DIRECT QUENCHED					
LAB	1800	1			WQ
LAB	1325	16			AC

HT Code: 48A				Furnace	Cool Code
Location	Temp	Hours	Mins	Cool Rate	
	F			Per Hrs	
(F)					
PLANT					MILL ANNEALED/DIRECT QUENCHED

MECHANICAL REMARKS

The tensile and hardness performed for Heat Treat Code 48A are As Shipped tests.

METALLOGRAPHY

GRAIN SIZE (As shipped cond.): Avg. ASTM 9

Tested at Acuren

MACRO

Material has been macro inspected and ultrasonic tested at intermediate billet to clear melt-type (piping, inclusions, etc.) defects.

REMARKS

Traveler(s) Heat # Ingot#
75828 A 45FM ATI Allvac 4374 Lancaster Highway Richburg, SC 29729 Phone (803) 789-3595 Page 5 of 6

Material has been produced, sampled, inspected, and tested in accordance with the customer purchase order and referenced specifications and conforms to the requirements unless otherwise noted in this certificate of test.

Any deviations to specification or customer purchase order requirements relative to testing, test values, hot working fixed practices, have been resolved in writing with customer prior to shipment.

The recording of false, fictitious, or fraudulent statements or entries on this document may violate Federal statutes, including but not limited to Title 18, Chapter 47 of the United States Code, and may be punishable as a felony.

If customer purchase order does not specifically reference a revision to a specification, ATI Allvac will work to the latest revision on file and in effect at time of order placement.

Test methods are per the latest ASTM Standards, currently recognized industry practices; or as agreed upon between ATI Allvac and customer.

Any chemical elements analyzed and found to have values below the actual limits of detection may be reported as < less than or reported at the detection level.

When values are reported to the significant places called for in the specifications, rounding will be done in accordance with ASTM E-29.

This is to certify that during manufacturing, handling, testing and inspection, this material did not come in direct contact with mercury or any device employing a single boundary of containment.

This Certificate of Test shall not be reproduced except in full, without the written approval of ATI Allvac Quality.

No weld repair has been performed on this material.

Material Safety Data Sheets (MSDS) - View or print from our site: www.allvac.com. Printed copies available on request from the ATI Allvac Sales Department.

Allvac products have not come in contact with radioactive, fertile or fissionable materials during manufacturing or processing.

This material was melted and manufactured in the United States of America unless otherwise noted in this Certificate of Test.

Traveler(s) Heat # Ingot#
75828 A 45FM

ATI Allvac 4374 Lancaster Highway

Richburg, SC 29729

Phone (803) 789-3595

Page 6 of 6

SPECIAL REMARKS

MELT METHOD: AOD/ESR

GEAR S-400 (GT193) supplier codes: Allvac Monroe - 87012, Allvac Lockport - T1226,
Acuren - T7605, Westmoreland T7869

TEST METHODS: C/S/O/N = ASTM E1019 (2011), XRF = ASTM E572 (2002A/2006*2), ASTM E322 (2012), ASTM E1085 (2009), ASTM E2465 (2011*1), OES = ASTM E415 (2008), ASTM E1086 (2008), GFAA = ASTM E1834 (2011), ICP-OES = ASTM E2594 (2009), ICP-MS = ASTM E2823 (2011); RTT = ASTM E8/E8M (2011); ETT = ASTM E21 (2009); Stress Rupture = ASTM E139 (2011), ASTM E292 (2009*1); Creep = ASTM E139 (2011); Charpy = ASTM E23 (2007A*1); Fracture Toughness = ASTM E399 (2009*2); Rockwell Hardness = ASTM E18 (2011); Brinell Hardness = ASTM E10 (2012); Microcleanliness = ASTM E45 (2011A); AMS 2300 = AMS 2300 (L); Grain Size = ASTM E112 (2010), ASTM E930 (1999/2007), ASTM E1181 (2002/2008); Macro = ASTM A604 (2007/2012); Sampling = AMS 2371J.



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

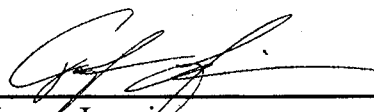
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	1000	EA	MS21075L3N		48761	ALCOA FASTENING/REPU	52828		


Jason Lewis
Vice President of Quality

03/06/14

Alcoa Fastening Systems



Shipper ID: 869590

Page: 1

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
NEWBURY PARK, REPUBLIC OPERATIONS
1300 Rancho Conejo Blvd
Newbury Park, CA 91320
TEL: (805) 262-4200

Ship Date: 01/22/14
Print Date: 01/22/14
Time: 15:48:27

Ship Via: FED EX GRD
INCO Terms: FCA NEWBURY PARK

Container/Weight:
Carrier Shipment Ref: 869590
Bill Lading #:

SHIP VIA :FED EX
BUYER:ROHAN JOHNSON

PHONE:

MATERIAL COMPLIES WITH DEARS 252.225-7009, PREFERENCE FOR DOMESTIC SPECIALTY METALS" WITH ITS ALTERNATE 1

***SHIP VIA FEDX GRD COLLECT ACCT# 0331-0149-0411 150 LBS OR MORE SHIP FED EX FREIGHT ECONOMY COLLECT ACCT# 018757
DO NOT SHIP BY ANY OTHER WITHOUT PROPER WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.

** BAR CODE PER QAP 33 CLAUSE P REQUIRED **

** QAP 33.0 REV G CLAUSES: A,A.1,B,C,E,H,P,U,V. CLAUSE A.3 GENERAL TERMS APPLIES.

PARTS ARE FOR AIRBUS END USE APPROVAL NUMBER #100329

REV:1

RELEASE NUMBER: BI380NAP24

Sales Order: F461312 Order Date: 03/01/13 Purchase Order: 0NAP24

Remarks: ADILENE

Ln	Item Number	Description	Rev	Qty Shipped	Qty B/O UM
1	RFM20A3	Floating Two Lug, C1050		56980.0	9270.0 EA
		Reduced Rivet, TSO-C148			
	Cust Line #: 1				
	Customer Item: MS21075L3N				
	Required Date: 08/08/13	Promised Date: 09/26/13			
	MFG C OF C CHEM & PHYS TEST REPORT REQ				
	CHARGES ON LINE #2&3 INVOICE WITH LINE #1				
	DUAL CERT PART NUMBER MS21075L3N TO MS21075L3, NAS1068A3 & NAS1068RA3				

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORT TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

**Alcoa
Fastening
Systems**



Shipper ID: 869590

Page: 2

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:

ALCOA FASTENING SYSTEMS
AEROSPACE PRODUCTS
NEWBURY PARK, REPUBLIC OPERATIONS
1300 Rancho Conejo Blvd
Newbury Park, CA 91320
TEL: (805) 262-4200

Ship Date: 01/22/14
Print Date: 01/22/14
Time: 15:48:27

Ship Via: FED EX GRD
INCO Terms: FCA NEWBURY PARK

Container/Weight:
Carrier Shipment Ref: 869590
Bill Lading #:

Ln Item Number Lot/Serial

1 RFM20A3

Cont: **

Loc/Lot: F-1801 48761 56-980-00 CDO: mx

HTS CODE: 7318160085
SCHEDULE-B NUMBER: 73181-0000 EGCN: 9A991

The export classification appears above. You are responsible for all related export license requirements.

***** Total Qty Shipped

56-980

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORT TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. THE SELLER'S MANUFACTURING LOT IDENTIFICATION NUMBER AND RETURN MERCHANDISE AUTHORIZATION (RMA) NUMBER MUST ACCOMPANY ALL RETURNS. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY IN QUANTITY, QUALITY, ETC. BETWEEN THE GOODS ACTUALLY SHIPPED AND/OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NOT LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

**CERTIFICATE OF TEST**

WE HEREBY CERTIFY THAT ALL MATERIALS USED IN THE MANUFACTURE OF PARTS COVERED BY THE REPORT CONFORM TO THE MATERIAL SPECIFICATIONS CALLED FOR BY THE PURCHASE ORDER. WE FURTHER CERTIFY THAT THE PARTS ARE MANUFACTURED IN ACCORDANCE WITH APPLICABLE DRAWINGS OR SPECIFICATIONS CURRENT ON THE DATE OF MANUFACTURE. TEST REPORTS COVERING MATERIALS IN THESE PARTS AND INDICATING CONFORMANCE WITH APPLICABLE SPECIFICATIONS ARE ON FILE AND SUBJECT TO EXAMINATION. PARTS AS SHIPPED HAVE NEVER BEEN IN CONTACT WITH MERCURY. **THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY.**

PARTS MANUFACTURED IN: ☐ U.S.A. ☒ MEXICO☒ IN ACCORDANCE WITH: DFAR 252.225.7014 ALT. I and DFAR 252.225.7009

Deefina Martinez
Signature of Quality Assurance Representative

1-23-14
Date

P.O. No:	0NAP24	Item No:	MS21075L3N REV.2
Quantity Ordered:	56,980	Date Cert Ordered:	1-23-14
Customer:	B/E AEROSPACE CONSUMABLES	ID No.:	48761
Description:	ASSEMBLY	Procurement Spec.:	NASM25027
Also Certified To:	MS21075L3 NAS1068A3, NAS1068RA3 REV.13	Additional Info:	RFM20A3
Date of Manufacture:	9-19-13		

IF APPLICABLE, CHECK ON BELOW:

☐ **FAA CERTIFICATION (PMA):** IT IS HEREBY CERTIFIED THAT (A) THE PARTS AND/OR MATERIALS REFLECTED HERE-IN WERE PRODUCED UNDER FEDERAL AVIATION ADMINISTRATION APPROVED MANUFACTURING AND QUALITY CONTROL SYSTEMS/METHODS AS SET FORTH IN FEDERAL AVIATION REGULATION, PART 21, SUB-PART K, PARAGRAPH 21.303 AND (B) ALL PARTS AND/OR MATERIALS ARE CERTIFIED NEW, CONFORMS TO THE DESIGN DATA AND ARE IN AIR WORTHY CONDITION.

Signature of Quality Assurance Representative










Date

☒ **TSO-C148 STATEMENT:** THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IS ACCEPTABLE TO OR APPROVE BY THE ADMINISTRATOR.

Deefina Martinez
Signature of Quality Assurance Representative

1-23-14
Date

FINAL (PROCESSING, LAB, MECHANICAL TESTING) INSPECTION REPORT

Lot Number: 48761	Part Number: RFMA20A3	Dwg. Number: NASM21075	Dwg. Rev#: 2	Lot Quantity: 106,980	Date: 01-14-14
Procurement Spec.: NASM25027		Proc. Spec. Rev#: 1	Note: All Specifications Referenced Refer To The Most Current Revision Unless Otherwise Stated		
SAMPLE SIZE	CHARACTERISTIC DESCRIPTION	INSPECTION MEDIA	ACCEPTANCE STAMP	PRODUCTION RELEASE DATE	
NUT	Material: CALSTRIP Heat: 237100 Size: .032 X .750	Vendor Certification Alloy Verification		9/19/13	
CAP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
BASKET	Material: CALSTRIP Heat: NLPR0931 Size: .025 X .812	Vendor Certification Alloy Verification		9/19/13	
CLIP	Material: Heat: Size:	Vendor Certification Alloy Verification	N/A		
	AMS2759/3 Stainless Steel Only Aged Load: _____	Tensile HRC Hardness Tester	N/A		
15	AMS-H-6875 Steel Only Austempering Load: 01-16-14	Tensile HRC Hardness Tester		1/17/14	
	AMS2410 [] AMS2411 []	Visual Adhesion And Thickness ASTM B568	N/A		
80	AMS-QQ-P-416 Class 1 [] 2 [] 3 []	Visual Adhesion And Thickness ASTM B568		1/20/14	
	AMS2400	Visual Adhesion And Thickness ASTM B568	N/A		
10	Embrittlement Relief	23 [] 48-50 [] Clip Hours Stress At Room Temp Per NASM1312, Test 14			
	Embrittlement Relief	96 [] Hours Stress At Service Temp Per NASM1312, Test 14 [] BPS-N-70 []	N/A		
80	Gold Chromate Treatment Type II	Visual- Workmanship Salt Spray Test of AMS-QQ-P-416		1/20/14	
	Stainless Steel Only Passivated Per AMS-QQ-P-35, AMS2700	Visual High Humidity Test Per NASM1312	N/A		
	Magnetic Permeability <2.0 (Air 1.0) For A Field Strength = 200 Oersteds	Indicator Per ASTM A342 Method 3, Corrosion Resistant Steel Only	N/A		
80	Non-Destructive Testing Discontinuities Sample [] 100% []	Magnetic Particle Per ASTM E1444 or Fluorescent Penetrant Per ASTM E1417		1/20/14	
32 PCS	Carbowax Per C-1315 Drawing Batch No: _____	Visual, Workmanship	N/A		
27	Dry Film Lubricant Per AS5272 Type 1 Batch No: PC14269	Visual, Workmanship, Adhesion Per AS5272 Verify Periodic Salt Spray		1/21/14	
	Microstructure	BPS-N-70 [] NAS3350 []	N/A		
32	Threads Per MIL-S-8879, AS8879	Method B, System 22		12/18/13	



Alcoa Fastening Systems
Aerospace Products - Republic Operations
Quality Operating Procedure

Document: F-10.706.1
Revision: 2
Effective Date: 9-25-2010
DCN: 1367

Push-Out, Torque-Out, Wrenching Torque, Tensile Test Results

LOT NUMBER	BPS-N-70 ATTRIBUTE PLAN	NOTE	25027 ATTRIBUTE PLAN
48761	LOT SIZE SS UNDER 9..... 2 9 THRU 15..... 3 16 THRU 25..... 4 26 THRU 90..... 5 91 THRU 280..... 7 281 THRU 3200..... 13 OVER 3200..... 15	ALL SAMPLES TESTED MUST MEET OR EXCEED THE MINIMUM REQUIREMENTS	LOT SIZE SS UNDER 10M..... 5 10M THRU 50M..... 10 50M THRU 100M..... 15 OVER 100M..... 27✓

PUSH-OUT TEST		DATE: 1-22-14		MIN. 100 POUNDS		PUSH-OUT REQUIREMENTS	
110	110	110	110	110	110	110	PASS / FAIL
110	110	110	110	110	110	110	110
110	110	110	110	110	110	110	110
							STAMP RFM 207-1

TORQUE-OUT TEST		DATE: 1-22-14		WRENCH SN: 4898		TORQUE-OUT REQUIREMENTS	
				MIN. 60 INCH POUNDS			
70	70	70	70	70	70	70	PASS / FAIL
70	70	70	70	70	70	70	70
70	70	70	70	70	70	70	70
							STAMP RFM 207-1

WRENCHING TORQUE TEST		DATE: _____		WRENCH SN: _____		WRENCHING TORQUE REQUIREMENTS	
				MIN. _____ INCH POUNDS			
N/A							PASS / FAIL
							STAMP

TENSILE TEST		DATE: 1-22-14		MACHINE SN: 223753		STAMP RFM 207-1	
TEST BOLT: MS9703		25027 REQ 2460 LBS		BPS-N-70 REQ		LBS	
2580	2580	2580	2580	2580	HIGH = 2580	[] PROOF LOAD TEST *	
2580	2580	2580	2580	2580	LOW = 2580	[] TESTED TO FAILURE	
2580	2580	2580	2580	2580	R = 0	(RANGE = HIGH MINUS LOW)	
2580	2580	2580	2580	2580	X = 2580	(AVERAGE TENSILE STRENGTH)	
2580	2580	2580	2580	2580	R x 4 = 0		
2580	2580				X-4R = 2580		

*Note: The required Safety Load is 3% minimum above the specified minimum Proof Load requirement as described in QOP 10.702.




FINAL TORQUE AND HARDNESS TEST RESULTS

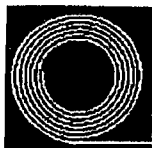
Lot Number: 48761	Part Number: RFM20A3	Dwg. Number: NAJM21075	Dwg. Rev#: 2	Lot Quantity: 106,980
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BPS-N-70 ATTRIBUTE PLAN			Other:		25027 ATTRIBUTE PLAN		
Lot Size	Sample Size	Accept	Sample Size	Accept	Lot Size	Sample Size	Accept
UNDER 9	2	0			Under 10M	5	0
9 THRU 15	3	0			10M THRU 50M	10	0
16 THRU 25	4	0			50M THRU 100M	15	0
26 THRU 90	5	0			OVER 100M	27	0
91 THRU 280	7	0					
281 THRU 3200	13	0					
OVER 3200	15	0					

TORQUE TEST														
Test Bolt: MAS 9703				Test Bolt Lot #: 35570M				Date: 01-22-14				Stamp: RFM 207-1		
Max. In.Lbs.: (1 ST ON) 18.0		Min. In.Lbs.: (1 ST BRK) 2.0		Seated Load:		NOTE: Record all cycles exhibiting values exceeding or not meeting maximum or minimum requirements as described in QOP 10.703, paragraph 8.7 and 9.11.								
CY	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK	ON	BRK
1	11.0	8.0	10.0	8.0	11.0	9.0	11.0	8.0	10.0	9.0	12.0	9.0	11.0	9.0
7	13.0	11.0	11.0	9.0	12.0	10.0	11.0	9.0	13.0	10.0	13.0	13.0	11.0	10.0
15	13.0	10.0	12.0	10.0	12.0	10.0	11.0	9.0	15.0	11.0	13.0	12.0	10.0	9.0
1	12.0	10.0	7.0	5.0	10.0	9.0	10.0	11.0	10.0	9.0	11.0	10.0	12.0	10.0
7	13.0	12.0	7.0	5.0	12.0	12.0	12.0	11.0	10.0	9.0	13.0	13.0	13.0	12.0
15	14.0	14.0	7.0	6.0	11.0	10.0	11.0	10.0	11.0	9.0	11.0	11.0	13.0	12.0
1	10.0	9.0	10.0	8.0	10.0	8.0	12.0	10.0	10.0	8.0	11.0	8.0	13.0	11.0
7	10.0	10.0	10.0	9.0	9.0	7.0	15.0	10.0	10.0	8.0	10.0	9.0	16.0	12.0
15	8.0	7.0	11.0	10.0	10.0	9.0	15.0	12.0	12.0	9.0	13.0	11.0	12.0	11.0
1	10.0	7.0	13.0	11.0	11.0	9.0	12.0	12.0	10.0	9.0	12.0	11.0		
7	11.0	9.0	14.0	12.0	13.0	12.0	15.0	12.0	12.0	11.0	13.0	11.0		
15	11.0	10.0	16.0	14.0	14.0	12.0	13.0	13.0	12.0	11.0				

HARDNESS TEST															
CONVERTED FROM 30N SCALE TO HRC per ASTM E140					HRC Requirement: Min.: _____ Max.: <u>49</u>				Date: <u>01-17-14</u>				Stamp: 		
HRC	<u>44</u>	<u>45</u>	<u>45</u>	<u>45</u>	<u>45</u>	<u>45</u>	<u>45</u>	<u>43</u>	<u>45</u>	<u>45</u>	<u>44</u>	<u>45</u>	<u>43</u>	<u>44</u>	<u>45</u>
30N	<u>63.5</u>	<u>63.6</u>	<u>63.9</u>	<u>63.9</u>	<u>64.3</u>	<u>63.8</u>	<u>63.9</u>	<u>62.5</u>	<u>63.7</u>	<u>64.0</u>	<u>63.4</u>	<u>63.8</u>	<u>62.5</u>	<u>63.5</u>	<u>63.9</u>
15N*															
* CLIPS AND NUTS ONLY															

CERTIFIED TEST REPORT



Calstrip Steel Corporation

~~REGISTERED ISO 9001:2008~~

7140 Bandini Blvd. • Los Angeles, CA 90040-3388

(323)726-1345 • Fax (323)722-8269

Customer: ALCOA FASTENING SYSTEMS REPUBLIC Address: REPUBLIC FASTENER 1300 RANCHO CONEJO BLVD. NEWBURY PARK, CA 91320	Order Number: S88785 / W113047 Customer PO: 220695680 Shipped Date: 11/05/2013 Packlist ID: 153600
Part ID: R620-032-750-CS ✓ Description: HC.CR.1050.032X750 XCOIL Drawing #: R620-032-750-CS Rev #: 08/20/08	Material Spec: AMS-5085H, AMS QQS-700B, QQS-635, ASTM A684-12

HeatID: 237100 ✓

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.5200 ✓	0.6400 ✓	0.0110 ✓	0.0060 ✓	0.2350 ✓	0.0380	0.0450	0.0880	0.0120	
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
	0.0010		0.0040	0.0310				0.0080	

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test
			HRB 77	OK
Grain Size	Olsen Test	Spher%	Decarb	Reduct %
8		100	0	

Skid Numbers	# of Coils	Weight
W113047-1	7	1,244
W113047-2	7	1,246
W113047-3	6	1,028 ✓
W113047-4	6	1,100
	26	4,618

Comment: SOURCE- NUCOR (USA)

RFM

1

AV



13-894

All work on this order has been performed in accordance with the Company's Quality Assurance Manual.

Mario Vargas

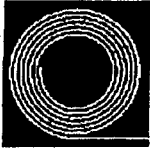
MARIO VARGAS Technical Services

Form #:

Print Date: 11/5/2013

Page: 2

CERTIFIED TEST REPORT



Calstrip Steel Corporation

REGISTERED ISO 9001:2008

7140 Bandini Blvd. * Los Angeles, CA 90040-3388

(323)726-1345 * Fax (323)722-8269

Customer: ALCOA FASTENING SYSTEMS REPUBLIC Address: REPUBLIC FASTENER 1300 RANCHO CONEJO BLVD. NEWBURY PARK, CA 91320	Order Number: S88785 / W113043 Customer PO: 220695680 Shipped Date: 11/05/2013 Packlist ID: 153600
Part ID: R620-025-812-CS Description: HC.CR.1050.025X.812XCOIL Drawing #: R620-025-812 Rev #:	Material Spec: AMS-5085H, AMS QQS-700B, QQS-635, ASTM A684-12

HeatID: NLPR0931

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.5100	0.6500	0.0060	0.0030	0.1790	0.0700	0.0400	0.1500	0.0200	
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
	0.0010	0.0200	0.0010	0.0360	0.0017			0.0080	

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test
			HRB 77	OK

Grain Size	Olsen Test	Spher%	Decarb	Reduct %
8		100	0	

Skid Numbers	# of Coils	Weight
W113043-1	7	1,278
W113043-2	7	1,274
W113043-3	7	1,288
W113043-4	7	1,286
	28	5,126

Comment: SOURCE- NLMK (USA)



RFM
1
AV

13-893

All work on this order has been performed in accordance with the Company's Quality Assurance Manual.


MARIO VARGAS

Technical Services

Form #:

Print Date: 11/5/2013

Page: 1



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

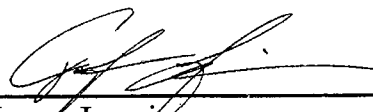
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
15	50	EA	AN3-15A		61991	MAC FASTENERS		0RPT4	


Jason Lewis
Vice President of Quality

03/06/14

Inv # 03/06/14

MACFASTENERS, INC.

1110 Enterprise Street

Ottawa, KS 66067

Phone: 785-242-8812

Fax: 785-242-4616

Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT

To: 10000 NW 15TH TERRACE

MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT

To: 9835 NW 14th Street

Miami, FL 33172

United States

Shipment No: 56363

Shipment Date: 11/27/12

Ship Via: United Parcel Service

Order Number: 44900

Order Date: 03/31/12

Customer Code: BE AEROSPACE

Phone: (305) 925-2600

PO Number: 0FVN25

Terms: Net 30 Days

LOT #61991

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
1	50,000	60,000	0		M	AN3-15A Bolt, machine- Aircraft	2	61991

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0FVN25

PART NUMBER: AN3-15A

REV: 2

LOT NUMBER: 61991

MANUFACTURED QUANTITY: 60,000

MILL HEAT NUMBER: 8099283

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 11/20/12


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0FVN25	MFG QUANTITY 60,000	DATE 11/20/12
PART NUMBER AN3-15A	REV 2	LOT NO 61991	PROCUREMENT SPEC NASM6812

MATERIAL TYPE 8740				MATERIAL SPECIFICATION MIL-S-6049/AMS6322				MILL HEAT NUMBER 8099283			SUPPLIER JOHNSTOWN		
C .41	Si .25	Mn .86	P .010	S .013	Cu .15	Ni .42	Cr .50	Mo .21	V .003	B	Fe	Al .030	Ti
	Co	N .0069	Bi	Pb	Mg	Zn		Nb	Sn 008			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
2,980
2,990
2,970
2,980
2,980
MIN. REQ. 2210

DOUBLE SHEAR STRENGTH POUNDS / PSI
5,030
5,010
5,010
5,040
5,030
MIN. REQ. 4250

HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 5
ACTUAL RESULTS 31-32 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22	System <input type="checkbox"/> 23

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 11/20/12

PO NUMBER: 0FVN25

MANUFACTURED QUANTITY: 60,000

PROCESSOR:

LOT NUMBER: 61991

MATERIAL: TYPE 8740

PART NUMBER: AN3-15A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 31-32 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029

DE TRAY

Plating Works

Specialized Electro-Plating and Polishing
Nickel
Copper
Decorative Chrome
Satin Chrome
Zinc
Cadmium
Passivate
Bright Dip
Strip Copper
Descale

10406 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

November 19, 2012

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

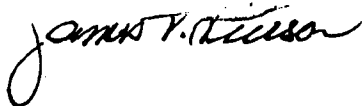
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our
Invoice# 165695 dated 11/19/2012 for:

Lot#-61991

P.N.-AN3-15A

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



**Johnstown
Wire
Technologies**

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
299367

TEST REPORT

LOT NUMBER

K-8099283

SALES ORDER / RLS

155493 / 1

SOLD TO

Mac Fasteners, Inc.
1110 Enterprise Street
Ottawa, KS 66067
USA



CUSTOMER P.O. 50516	CUSTOMER PART	QUANTITY 17,927 LBS	COILS 9	LADING NO 00112629	SHIPMENT DATE 08/31/2012
SPECIFICATION MacFast-87186 AMS2301; AMS8322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In Process Heavy Phos & Light Lube Ctd Size: .1865 +.001 -.000					
CERTIFICATION REQUIREMENTS					
Chemical					
C	Mn	P	S	Si	Al
.41	.86	.010	.013	.25	.030
Ni	Cr	Mo	Cu	V	
.42	.50	.21	.15	.003	
Ca	Ti	N	Sn		
.001	???????	.0069	.008		
Physical					
AMS 2301	J1	J10	J11	J12	J2
0000	58	40	38	37	57
					J3
					56
					J5
					54
					J4
					55
					J6
					52
					J7
					49
					J8
					46
					J9
					43
MacroClean E-381					
112					
Mechanical					
TEST	UNITS	HIGH	LOW	AVERAGE	
Tensile Str	Lbs/Sqin	87000	82000	85000	
RA Per Cent	Percent	75.1	71.4	73.3	
Decarb FFD	Inches	.000	.000	.000	
Surface def. depth	Inches	.000	.000	.000	
Rod / Melt Source					
Rod Source	Melt Source	Country of Origin	Nafta		
Republic	Republic	USA	Yes		
End of Certification					

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

D. L. Deetscreek
D. L. Deetscreek
Director of Quality Assurance



1801 EAST BEEK RD.
CHICAGO, IL 60604

CHICAGO, IL 60604
FAX: 312-420-5423

CERTIFICATE OF TESTS

REPUBLIC STEEL

5/1/2012 5:53:00 AM
PAGE 1 OF 2

PURCHASE ORD: 82026
PART NUMBER: FXT40AA-.313
ORDER NUMBER: 1513709 - 01
HEAT: 8099283

PURCHASE ORDER DATE: 2/20/2012
ACCOUNT NUMBER: 5672-1920-01
SCHEDULE: 8774-91
REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
124 LAUREL AVE
TRUCK STPO 9 ROD DOCK
JOHNSTOWN, PA 15904

----- MATERIAL DESCRIPTION -----
HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EKC PARA
10.3 AMS 6322N EKC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EKC SURFACE DEFECTS
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL 8 6049A & AMD 1 COND B-1 EKC MARK &
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS
SIZE: RDS .3130 DIAM X COIL
RDS 7.9502MM DIAM X COIL

LADLE CHEMISTRY %							
C	MN	P	S	SI	CU	NI	CR
0.41	0.86	0.010	0.013	0.25	0.15	0.42	0.50
V	MO	SN	AL	B	CB	N	
0.003	0.21	0.008	0.030	0.0000	0.001	0.0069	

----- CALCULATED TESTS -----
REDUCTION RATIO 1,690.4 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER
ASTM A29.

----- SEMI - FINISHED RESULTS -----

JOMINY HARDNESS TEST SAE J406/ASTM A255
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32
58 57 56 55 54 52 49 46 43 40 38 37 35 34 34 33 31 31 30 30 29 29 29 29

MACRO ETCH TEST ASTM E381/MIL STD 430
ETCHANT: HCL TEMPERATURE: 170
S R C
PCE 13 Z 1 1 2

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300
IND AVG IND AVG
FREQ FREQ SEV SEV
PCE 03 0 0 0 0

----- FINISHED SIZE RESULTS -----
DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558
ETCHANT - NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
			INCHES
PCE 6264	0.002	0.001	0.001

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

MT Kruth

1801 EAST 28TH ST.
PHONE: 330-438-1669LORAIN, OH 44053
FAX: 330-438-1669

CERTIFICATE OF TESTS

REPUBLIC STEEL

5/1/2012 5:53:00 AM
PAGE 2 OF 2PURCHASE ORD: 82026
PART NUMBER: FKT40AA-.313
ORDER NUMBER: 1513709 - 01
HEAT: 8099283PURCHASE ORDER DATE: 2/20/2012
ACCOUNT NUMBER: 5672-1920-01
SCHEDULE: 8774-91
REVISION: 1

NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

NOTES (CONTINUED)

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EF BLOOM RED. RATIO: 1690.4

END OF DATA CC END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684
FILE 1 COPYG. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
52	20	EA	MS27039-4-11		57161	MAC FASTENERS	0RFT4		


Jason Lewis
Vice President of Quality

03/06/14

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT
To: 10000 NW 15TH TERRACE
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT
To: 9835 NW 14th Street
Miami, FL 33172
United States

Shipment No: 57319
Shipment Date: 02/04/13
Ship Via: United Parcel Service
Order Number: 42428
Order Date: 07/15/11

Customer Code: BE AEROSPACE
Phone: (305) 925-2600
PO Number: 1A1011
Terms: Net 30 Days

LOT #57161

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Revision</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>				
3	25,000	30,000	0		M	MS27039-4-11 Screw machine pan head structural cross recessed	3	57161

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 1A1011

PART NUMBER: MS27039-4-11

REV: 3

LOT NUMBER: 57161

MANUFACTURED QUANTITY: 30,000

MILL HEAT NUMBER: 8191599

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number
do not contain Mercury or Mercury compounds, and were
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured
by MAC FASTENERS, INC. within the United States, and were processed in accordance with all
applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 02/01/13


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 1A1011	MFG QUANTITY 30,000	DATE 02/01/13
PART NUMBER MS27039-4-11	REV 3	LOT NO 57161	PROCUREMENT SPEC NASM7839

MATERIAL				MATERIAL SPECIFICATION				MILL HEAT NUMBER			SUPPLIER		
TYPE 8740				MIL-S-6049/AMS6322				8191599			JOHNSTOWN		
C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.40	.25	.86	.007	.010	.08	.41	.49	.21	.005			.033	
	Co	N .0047	Bi	Pb	Mg	Zn		Nb	Sn .005			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS
5,400
5,420
5,400
5,440
5,400
5,420
5,420
5,440
MIN. REQ. 4550

DOUBLE SHEAR STRENGTH POUNDS / PSI
TOO SHORT TO TEST PER NASM1312-13
MIN. REQ.

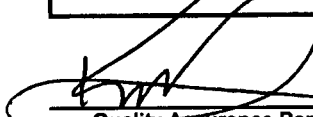
HARDNESS
ROCKWELL "C" SCALE
REQ. 26 - 32 HRC
SAMPLE SIZE 8
ACTUAL RESULTS 29-30 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS
Magnetic Particle Inspection per ASTM E1444 <input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417 <input type="checkbox"/>
Recess Torque Test <input type="checkbox"/>
Head Marking <input checked="" type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


 Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 02/01/13

PO NUMBER: 1A1011

MANUFACTURED QUANTITY: 30,000

LOT NUMBER: 57161

MATERIAL: TYPE 8740

PART NUMBER: MS27039-4-11

REVISION: 3

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 8

HARDNESS: 29-30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.


QUALITY ASSURANCE REPRESENTATIVE

DE TRAY

Plating Works

Specialized Electro-Plating and Polishing
Nickel **Passivate**
Copper **Bright Dip**
Decorative Chrome **Strip Copper**
Satin Chrome **Descale**
Zinc
Cadmium

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@Aol.com

January 30, 2013

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

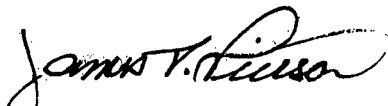
Subject: Certification

This is to certify that the following parts have been electrodeposited cadmium plate per Spec.-
QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our
Invoice#167143 dated 01/30/2013 for:

Lot#-57161

P.N.- MS27039-4-11

James T. Pierson, Vice-President


DE TRAY PLATING WORKS



Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
487782

TEST REPORT

LOT NUMBER
K-8191599
SALES ORDER / RLS
009592 / 2

SOLD TO

Mac Fasteners, Inc.
C/O TD Logistics Inc.
14505 W 100th Street
Lenexa, KS 66215
USA



CUSTOMER P.O. 50516	CUSTOMER PART 8740-.2465	QUANTITY 21,176 LBS	COILS 12	LADING NO 00114187	SHIPMENT DATE 11/28/2012							
SPECIFICATION MacFast-87246 AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS TS 95000 PSI Max Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spheroidize Annealed In Process Heavy Phos & Light Lube Ctd Size: .2465 +.0005 -.0005												
CERTIFICATION REQUIREMENTS												
Chemical												
C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	V		
.40	.86	.007	.010	.25	.033	.41	.49	.21	.08	.005		
Co	Ti	N	Sn									
.003	????????	.0047	.005									
Physical												
AMS 2301	J1	J10	J11	J12	J2	J3	J5	J4	J6	J7	J8	J9
0000	58	39	37	36	57	56	54	55	52	49	46	42
MacroClean E-381												
111												
Mechanical												
TEST	UNITS		HIGH		LOW		AVERAGE					
Tensile Str	Lbs/SqIn		87000		84000		86000					
RA Per Cent	Percent		72.1		68.1		70.0					
Decarb FFD	Inches		.000		.000		.000					
Surface def. depth	Inches		.001		.000		.001					
Rod / Melt Source												
Rod Source	Melt Source		Country of Origin		Nafta							
Republic	Republic		USA		Yes							
End of Certification												

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

D. L. Deetscreek
D. L. Deetscreek
Director of Quality Assurance



1807 EAST 28TH ST.
PHOENIX 330-438-8580

LEHART, OK 44053
FAX: 330-438-8699

CERTIFICATE OF TESTS

REPUBLIC STEEL

8/17/2012 2:08:00 PM

PAGE 1 OF 2

PURCHASE ORD: 82817
PART NUMBER: FXT40AA-.3125
ORDER NUMBER: 1526555 - 01
HEAT: 8191599

PURCHASE ORDER DATE: 7/6/2012
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 3454-92
REVISION: 1

CHARGE ADDRESS

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
C/O C & BL RAILROAD
TRACK 629
JOHNSTOWN, PA 15901

MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGAUSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS
SIZE: RDS .3125 DIAM X COIL
RDS 7.9375MM DIAM X COIL

LADLE CHEMISTRY

C	MN	P	S	SI	CU	NI	CR
0.40	0.86	0.007	0.010	0.25	0.08	0.41	0.49
V	MO	SN	AL	B	CB	N	
0.005	0.21	0.005	0.033	0.0001	0.003	0.0047	

CALCULATED TESTS

REDUCTION RATIO 1,690.4 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER
ASTM A29.

SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST

SAE J406/ASTM A255

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32
58 57 56 55 54 52 49 46 42 39 37 36 35 33 32 32 31 30 29 29 28 28 28 27

MACRO ETCH TEST

ASTM E381/MIL STD 430

ETCHANT: HCL TEMPERATURE: 170

	S	R	C
AVG	1	1	1

MAGNETIC PARTICLE TEST

AMS 2301 AMS2304 AMS2300

	IND	AVG	IND	AVG
FREQ	FREQ	SEV	SEV	
PCE 03	0	0	0	0

FINISHED SIZE RESULTS

DECARBURIZATION TEST

SAE J419/ASTM E1077/JIS G0558

ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
PCE 11300	0.002	0	0.002

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



CERTIFICATE OF TESTS

1407 EAST 28TH ST.
PHONE: 330-438-1880LORAIN, OH 44053
FAX: 330-438-8686

REPUBLIC STEEL

8/17/2012 2:08:00 PM

PAGE 2 OF 2

PURCHASE ORD: 82817
PART NUMBER: FXT40AA-.3125
ORDER NUMBER: 1526555 - 01
HEAT: 8191599PURCHASE ORDER DATE: 7/6/2012
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 3454-92
REVISION: 1

NOTES

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

NOTES (CONTINUED)

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

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NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

SOURCE INFORMATION

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EF BLOOM RED. RATIO: 1690.4

END OF DATA

CC

END OF DATA

WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA
FILE 1 COPY

1-814-532-5684

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
36	10	EA	HL20PB-5-8		69884	WEST COAST AEROSPACE	60516		


Jason Lewis
Vice President of Quality

03/06/14



**WEST COAST
AEROSPACE, INC.**

24224 Broad Street • Carson, CA 90745

■ Cust. Service 310/518.0633 ■ Fax. 310/518.4071
■ Accounting 310/847.4823

INVOICE NUMBER

230199

S ■ 076
O ■ B/E AEROSPACE, INC.
L ■ CONSUMABLES MANAGEMENT
D ■ P.O. BOX 025263
T ■ MIAMI, FL
O ■

33102-5263

S ■
H ■ B/E AEROSPACE, INC.
I ■ CONSUMABLES MANAGEMENT
P ■ 9835 NW 14TH ST
T ■ MIAMI, FL
O ■

33172

DATE 09/24/2013	PURCHASE ORDER NUMBER ONKH77	SHIPPED VIA FEDEXGD/NATIONAL LTL	TERMS NET 30
--------------------	---------------------------------	-------------------------------------	-----------------

1 50000 HL20PB-5-8 REV. 23 69884

RELEASE # KRM40ONKH77

BARCODE REQUIRED

GENERAL TERMS AND CONDITIONS OF SALE
ALL MATERIAL RETURNED TO WEST COAST
AEROSPACE WITHOUT PRIOR AUTHORIZATION
WILL BE REFUSED AND SENT BACK AT
YOUR COST. PLEASE CALL WEST COAST
AEROSPACE CUSTOMER SERVICE FOR A
RMA NUMBER PRIOR TO ANY RETURN.
SELLER SHALL NOT BE LIABLE FOR ANY
LOSS OR DAMAGE RESULTING FROM DELAY
OR NONFULFILLMENT OF ORDERS DUE TO
STRIKES, FIRES, ACCIDENTS, TRANSPORTATION
COMPANIES OR FOR ANY REASON OR REASONS
BEYOND THE CONTROL OF SELLER OR ITS SUPPLIERS.

IF ANY DISPUTE OR LEGAL ACTION ARISES
INVOLVING THE COLLECTION OF THIS
INVOICE THE PREVAILING PARTY SHALL BE
ENTITLED TO AN AWARD OF REASONABLE
ATTORNEY'S FEES AND COURT COSTS IN
ADDITION TO ANY OTHER RELIEF THAT MAY
BE GRANTED BY THE COURT.

IF AN INVOICE IS NOT PAID WITHIN 30 DAYS
OF BILLING DATE, AMOUNT WILL BE
SUBJECT TO FINANCE CHARGE OF 1 1/2%
(ANNUAL PERCENTAGE OF 18%).

CERTIFICATION OF CONFORMANCE AND AFFIDAVIT

SELLER HEREBY CERTIFIES THAT THE RAW MATERIALS USED IN THE PERFORMANCE OF THIS CONTRACT HAVE BEEN TESTED IN ACCORDANCE WITH AND MEETS THE CHEMICAL AND PHYSICAL REQUIREMENTS OF APPLICABLE MATERIAL AND/OR PROCUREMENT SPECIFICATIONS. SELLER FURTHER CERTIFIES THAT METALLURGICAL EXAMINATIONS AND PHYSICAL TESTS OF FINISHED PRODUCT, WHEN REQUIRED BY CONTRACT, ARE REPORTED. METALLURGICAL AND PHYSICAL TEST REPORTS ARE ON FILE AND AVAILABLE FOR EXAMINATION BY CUSTOMER. FOR ACTUAL INDIVIDUAL PHYSICAL AND CHEMICAL TEST RESULTS, IDENTIFIABLE BY PART NUMBER, INSPECTION LOT NUMBER, AND MATERIAL SUPPLIER'S HEAT NUMBER FOR THE INSPECTION LOT FROM WHICH SHIPMENT WAS MADE, REFER TO WEST COAST AEROSPACE, INC. CERTIFIED TEST REPORT, IF APPLICABLE. SELLER FURTHER CERTIFIES THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH APPLICABLE DRAWINGS AND SPECIFICATIONS. FLUORESCENT PENETRANT, OR MAGNETIC PARTICLE INSPECTIONS HAVE BEEN PERFORMED AND MEET THE REQUIREMENTS OF DRAWINGS AND CONTRACT REQUIREMENTS. RECORDS OF SUCH INSPECTIONS ARE ON FILE AND AVAILABLE FOR EXAMINATION BY CUSTOMER.

TSO-C148 APPROVED

THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS SET IN THE MANUFACTURER'S DESIGN. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IF ACCEPTABLE TO OR APPROVED BY THE ADMINISTRATOR.

PACKING SLIP

CS023 10/11

QUALITY ASSURANCE AND RELIABILITY TEST REPORT

DATE: 09/24/2013

CUSTOMER: B/E AEROSPACE INC.

PO NO. : ONKH77

INVOICE NUMBER: 230199

PART NO.: HL20PB-5-8
REV. NO.: 23
MATERIAL: 8740

VENDOR PART NO.: HL20PB-5-8

QUANTITY
SHIPPED: 50000

SPEC: AMS 6322 Rev.N

MATERIAL
PRODUCER: WIRE TECH

LOT SIZE: 78301

INSPECTION LOT NUMBER: 69884

HEAT NO.: 10166390
MELT: USA
TEST DATE: 09/24/2013

DATE OF MANUFACTURE: 5/13/2013

ULTIMATE TENSILE STRENGTH		DOUBLE SHEAR	TENSION TENSION FATIGUE LIFE		MIL ANALYSIS	METALLURGICAL EXAMINATION																																			
POUNDS	LOCATION OF FAILURE	STRENGTH IN POUNDS	CYCLES	LOCATION OF FAILURE		SAMPLE SIZE: 15 MICRO EXAM SPEC: ACCEPT MACRO EXAM SPEC: ACCEPT H2: N/A ppm FINAL																																			
2409	THREAD	4196	N/A		Al O	<div>HARDNESS TEST-ROCKWELL C SCALE</div> <table><tr><td>38</td><td>38</td><td>38</td><td>38</td></tr><tr><td>38</td><td>38</td><td>38</td><td>37</td></tr><tr><td>37</td><td>36</td><td>37</td><td>38</td></tr><tr><td>38</td><td>38</td><td>38</td><td>38</td></tr><tr><td>36</td><td>38</td><td>38</td><td>38</td></tr><tr><td>38</td><td>38</td><td>37</td><td>38</td></tr><tr><td>37</td><td>37</td><td>38</td><td>38</td></tr><tr><td>38</td><td>38</td><td>38</td><td>38</td></tr></table>				38	38	38	38	38	38	38	37	37	36	37	38	38	38	38	38	36	38	38	38	38	38	37	38	37	37	38	38	38	38	38	38
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36	38	38		38																																					
38	38	37		38																																					
37	37	38		38																																					
38	38	38		38																																					
2584	THREAD	4165			Bi Pb .01																																				
2519	THREAD	4200			C R																																				
2531	THREAD	4203			Ca S .01																																				
2449	THREAD	4198			Co Se																																				
2502	THREAD	4196			Co Si .25																																				
2454	THREAD	4198			Cr Sn																																				
2477	THREAD	4213			Cu Ta																																				
2302	THREAD	4205			Fe Ti																																				
2411	THREAD	4228		H Tin																																					
2463	THREAD	4217		Mg V																																					
2401	THREAD	4240		Mn Y																																					
2515	THREAD	4219		Mo Zn																																					
2489	THREAD	4207		N Zr																																					
2475	THREAD	4222		Ni .43																																					
				Cb+Ta																																					
			MIN REQ: AVG REQ: LOW LOAD: HIGH LOAD:		<div>HIGH READING: 40 LOW READING: 36 SAMPLE SIZE: 32</div>																																				
MIN REQ: 2180 MAX REQ:		MIN REQ: 4010 MAX REQ:																																							

		OTHER SPECIFICATION (IF ANY)		YES
PROCUREMENT SPEC: HS342 REV AG		1 THREAD ROLL PER AS 8879D		X
HEX SOCKET TORQUE TEST		2 HEAT TREAT PER AMS-M-6875B		X
N/A IN-LBS	EMBRITTLMENT TEST PER NASM1312-5	3 CETYL ALCOHOL AS87132-06 TY III GRADE C/HS305W		X
	SAMPLE SIZE: LOAD: N/A HOURS:	4 MAG PARTICLE PER ASTM-E-1444-05		X
DUCTILITY TEST: N/A		5 CAD PLATE AMS-QQ-P-416C TY II CL.2		X
COATING/PLATING THICKNESS: ACCEPT		6 MATERIAL ALLOY HAS BEEN VERIFIED		X
REMARKS/DEVIATIONS (IF ANY)		7 PART NAME: BOLT		X
		8 MICRO ETCHANT: NITAL		X

CERTIFICATION OF CONFORMANCE

THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED IN USA AND INSPECTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. INSPECTIONS RECORDS ARE ON FILE AND ARE AVAILABLE ON REQUEST OF THE PROCURING AGENCY.

PART THREADS ARE MANUFACTURED AND INSPECTED IN ACCORDANCE WITH AS8879 (MIL-S-8879 IF MANUFACTURED BEFORE 10/96).
MODIFIED PER APPLICABLE DRAWING.

MAGNETIC PARTICLE INSPECTION AND FLUORESCENT PENETRANT INSPECTION AS APPLICABLE HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION.

CADMIUM PLATED PINS BAKED FOR HYDROGEN EMBRITTLEMENT RELIEF FOR 23 HRS. MIN AT 375 DEGS F WITHIN 4 HRS. AFTER PLATING AND BEFORE SUPPLEMENTARY CHROMATE TREATMENT. (APPLICABLE TO 8740 MATERIAL ONLY)

TSO-C148 Approved

TSO-C148 APPROVED THE PARTS CONTAINED IN THIS SHIPMENT HAVE BEEN MANUFACTURED AND INSPECTED IN ACCORDANCE WITH TSO-C148. THE CONDITIONS AND TESTS REQUIRED FOR TSO-C148 APPROVAL OF THIS ARTICLE ARE MINIMUM PERFORMANCE STANDARDS SET IN THE MANUFACTURER'S DESIGN. AIRCRAFT FASTENERS APPROVED UNDER THIS TSO ARE NOT NECESSARILY INTERCHANGEABLE WITH OTHER AIRCRAFT FASTENERS APPROVED UNDER THIS TSO. FASTENERS OF SIMILAR DIMENSIONAL PROPERTIES MAY HAVE WIDELY VARYING PERFORMANCE AND METALLURGICAL PROPERTIES. SUBSTITUTION OF PARTS MAY ONLY BE DONE IF ACCEPTABLE OR APPROVED BY THE ADMINISTRATOR.

ISO 9001, AS9100, AND AS9102 COMPLIANT. MATERIAL SUPPLIED ON THIS ORDER IS IN COMPLIANCE WITH DFAR 252.225-7009.

THE TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROBAL OF WEST COAST AEROSPACE INC. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENT OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

APPROVED:

FRED BACA, QC TECH



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
21	200	EA	AN4-14A		68538	MAC FASTENERS		ORPT4	


Jason Lewis
Vice President of Quality

03/06/14

MACFASTENERS, INC.

1110 Enterprise Street
Ottawa, KS 66067
Phone: 785-242-8812
Fax: 785-242-4616

Packing List

Bill B/E AEROSPACE CONSUMABLES MGMT
To: 10000 NW 15TH TERRACE
MIAMI, FL 33172

Ship B/E AEROSPACE CONSUMABLES MGMT
To: 9835 NW 14th Street
Miami, FL 33172
United States

Shipment No: 62095
Shipment Date: 01/23/14
Ship Via: United Parcel Service
Order Number: 48480
Order Date: 07/22/13

Customer Code: BE AEROSPACE
Phone: (305) 925-2600
PO Number: 0PZH84
Terms: Net 30 Days

LOT #68538

<u>Item</u>	<u>Quantity</u>				<u>Unit</u>	<u>Description</u>	<u>Job Number</u>
	<u>Open</u>	<u>Shipped</u>	<u>Back Ord</u>	<u>Canceled</u>			
1	100,000	110,000	0		M	AN4-14A Bolt, machine-- Aircraft	68538

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

**CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0PZH84

PART NUMBER: AN4-14A

REV: 2

LOT NUMBER: 68538

MANUFACTURED QUANTITY: 110,000

MILL HEAT NUMBER: 8193290

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 01/22/14


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0PZH84	MFG QUANTITY 110,000	DATE 01/22/14
PART NUMBER AN4-14A	REV 2	LOT NO 68538	PROCUREMENT SPEC NASM6812

MATERIAL TYPE 8740				MATERIAL SPECIFICATION MIL-S-6049/AMS6322				MILL HEAT NUMBER 8193290			SUPPLIER JOHNSTOWN		
C .40	Si .24	Mn .77	P .010	S .010	Cu .10	Ni .52	Cr .58	Mo .26	V .002	B	Fe	Al .023	Ti
	Co	N .0060	Bi	Pb	Mg	Zn		Nb	Sn .005			Other	

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	
5,770	
5,710	
5,720	
5,730	
5,750	
MIN. REQ.	4,080

DOUBLE SHEAR STRENGTH POUNDS / PSI	
8,180	
8,130	
8,140	
8,160	
8,190	
MIN. REQ.	7,360

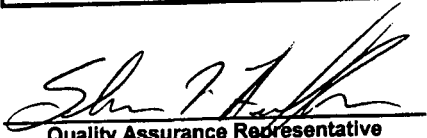
HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS 28 - 30 HRC	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 <input type="checkbox"/>	System 22 <input checked="" type="checkbox"/>	System 23 <input type="checkbox"/>

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Recess Torque Test	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Magnetic Permeability ASTM A342 less than 2.0	<input type="checkbox"/>

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.


Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 01/22/14

PO NUMBER: 0PZH84

MANUFACTURED QUANTITY: 110,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 68538

MATERIAL: TYPE 8740

PART NUMBER: AN4-14A

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 28 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.


QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029



Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

WORK ORDER
800310

TEST REPORT

LOT NUMBER
K-8193290
SALES ORDER / RLS
002318 / 1

SOLD TO

Mac Fasteners, Inc.
C/O TD Logistics Inc.
14505 W 100th Street
Lenexa, KS 66215
USA



CUSTOMER P.O. 50516	CUSTOMER PART 8740-.2465	QUANTITY 39,644 LBS	COILS 20	LADING NO 00119854	SHIPMENT DATE 09/20/2013
SPECIFICATION MacFast-87246 AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS TS 95000 PSI Max Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spherodize Annealed In Process Heavy Phos & Light Lube Ctd Size: .2465 +.0005 -.0005					
CERTIFICATION REQUIREMENTS					
Chemical					
C .40	Mn .77	P .010	S .010	Si .24	Al .023
Ni .52	Cr .58	Mo .26	Cu .10	V .002	
Cb .000	Ti ????????	N .0060	Sn .005		
Physical					
AMS 2301 0000	J1 56	J10 40	J11 38	J12 36	J2 55
					J3 55
					J5 53
					J4 54
					J6 52
					J7 50
					J8 46
					J9 43
MacroClean E-381 111					
Mechanical					
TEST	UNITS	HIGH	LOW	AVERAGE	
Tensile Str	Lbs/SqIn	86000	84000	85000	
RA Per Cent	Percent	73.8	67.2	70.3	
Decarb FFD	Inches	.000	.000	.000	
Surface def. depth	Inches	.001	.001	.001	
Rod / Melt Source					
Rod Source Republic	Melt Source Republic	Country of Origin USA	Nafta Yes		
End of Certification					

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

Daniel J. Mallik
Daniel J. Mallik Director of Quality Assurance 31



CERTIFICATE OF TESTS

1807 EAST 28TH ST.
PHONE: 330-438-5580LORAIN, OH 44055
FAX: 330-438-5695

REPUBLIC STEEL

6/24/2013
2:46:00 PM
PAGE 1 OF 2PURCHASE ORD: 84084
PART NUMBER: FXT40AA-.375
ORDER NUMBER: 1547434 - 01
HEAT: 8193290PURCHASE ORDER DATE: 3/4/2013
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 4927-93
REVISION: 1

CHARGE ADDRESS

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
C/O C & BL RAILROAD
TRACK 629
JOHNSTOWN, PA 15901

MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA
10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS
JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS
SIZE: RDS .3750 DIAM X COIL
RDS 9.5250MM DIAM X COIL

LADLE CHEMISTRY %							
C	MN	P	S	SI	CU	NI	CR
0.40	0.77	0.010	0.010	0.24	0.10	0.52	0.58
V	MO	SN	AL	B	CB	N	
0.002	0.26	0.005	0.023	0.0000	0.000	0.0060	

CALCULATED TESTS

REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST SAE J406/ASTM A255
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32
56 55 55 54 53 52 50 46 43 40 38 36 34 33 32 31 30 30 29 29 29 28 28

MACRO ETCH TEST ASTM E381/MIL STD 430
ETCHANT: HCL TEMPERATURE: 170
S R C
AVG 1 1 1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300
IND AVG IND AVG
FREQ FREQ SEV SEV
PCE 03 0 0 0 0

FINISHED SIZE RESULTS
DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE	COMPLETE	TOTAL
	INCHES	INCHES	DEPTH
PCE 6581	0.002	0	0.002

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES



CERTIFICATE OF TESTS

1807 EAST 28TH ST.
PHONE: 330-438-5680

REPUBLIC STEEL

LORAIN, OH 44055
FAX: 330-438-5695

6/24/2013
2:46:00 PM
PAGE 2 OF 2

PURCHASE ORD: 84084
PART NUMBER: FXT40AA-.375
ORDER NUMBER: 1547434 - 01
HEAT: 8193290

PURCHASE ORDER DATE: 3/4/2013
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 4927-93
REVISION: 1

CAPABLE OF SEAM DEPTH 1/4 MAX DIAMETER NOT LESS THAN .005 MAX

NOTES
CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019,
LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

NOTES (CONTINUED)
ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF
SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED
AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE
DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

SOURCE INFORMATION
MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EP BLOOM RED. RATIO: 1177.6

END OF DATA
WITH SHIPMENT 1 COPY PRINTED AT SHIPPING AREA
FAX SHIP TO 1 COPY ATTENTION EDWARD ZAPOLA 1-814-532-5684
FILE 1 COPY

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

COMMERCIAL PLATING COMPANY

TC-4500 XRF ST

Fri Sep 19 03:48:24 1997

COMMERCIAL PLATING CERTIFICATION AND TEST RESULTS

This is to certify that the order described below was plated to comply with the agreed upon requirements of the requested specification.

DATE: 01/18/14

CUSTOMER: MAC FASTENERS

PART NUMBER: AN4-14A

DESCRIPTION: BOLT

ORDER NUMBER: 94031

LOT NUMBER: 68538

TOTAL WEIGHT: 2972 LBS


PIECES PLATE TO GAUGE: Y

SPECIFICATION: SAE AMS QQ-P-416C, TYPE II, CLASS 2

REQUIREMENTS: 0.0003 CAD. MIN. AND YELLOW CHROMATE

AUTHORIZED SIGNATURE:

TITLE: QUALITY CONTROL MANAGER





B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
13	12	EA	AN310C4		0502120-280	GREER STOP NUT / SPS	27687		


Jason Lewis
Vice President of Quality

03/06/14

GREER STOP NUT

SPS 481 McNALLY DRIVE • NASHVILLE, TN 37211
TECHNOLOGIES

PREVENT FRAUD

Any alteration or misuse of this certificate, or any unauthorized rework or modification of the identified products voids all manufacturer's warranties, and may lead to civil damages and/or criminal penalties.

CUSTOMER NBR 01-0001-00427568-0001

B/E AEROSPACE CONSUMABLES
MANAGEMENT
9835 NW 14TH ST.
MIAMI, FL 33172

PACKING LIST

PACKING LIST

THE PRODUCTS THAT ARE COVERED BY THIS AGREEMENT ARE OF U.S. ORIGIN OR OTHERWISE SUBJECT TO U.S. EXPORT AND OTHER FOREIGN TRADE CONTROLS. THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS TO OTHER COUNTRIES OR PARTIES MAY REQUIRE THE PRIOR APPROVAL OF THE U.S. GOVERNMENT. DIVERSION OF THESE PRODUCTS FROM THE AUTHORIZED DESTINATION CONTRARY TO U.S. AND INTERNATIONAL LAW IS PROHIBITED. THE PURCHASER AGREES TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES, OTHER RELEVANT JURISDICTIONS, AND PERTINENT INTERNATIONAL ORGANIZATIONS PERTAINING TO THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS. ANY VIOLATIONS OF THIS CLAUSE, AS DETERMINED SOLELY BY SPS TECHNOLOGIES AND OR GREER STOP NUT, SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.

CLAIMS FOR GOODS MUST BE MADE ON RECEIPT OF GOODS. NO MATERIAL ACCEPTED FOR RETURN WITHOUT OUR PERMISSION.

PUBLISHED 08/30/13

ORDER NBR 100920-001

ORDER DATE 05/17/13

P/S # 100920001

PAGE 1

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 33102-5263

CUSTOMER P.O.		TERMS		SHIP FROM	SCHEDULE DATE			
OFFH47		N NET 30 DAYS		AI	09/29/13		PO # OFFH47	
CARRIER CD/DESC		CARRIER NBR	FREIGHT		REG	TERR	CREP	REQ. DATE
TRK ANY TRUCKING FIRM			COLLECT		2751	52	0103	10/11/13
LNE	PRODUCT CODE	DESCRIPTION		ALTERNATE CODE	QUANTITY	UM	UNIT PRICE	ACT QTY
01	0502120	L79SC310 0428		AN310-C4	25000	C		
UNDER 150W SHIP FEDEX GROUND ACCT #0331-0149-0 MARK COLLECT OVER 150 LBS SHIP FED EX NATIONAL LTL ACCT #081757 SHIPPING BOX WEIGHT LIMIT 40 LBS CHEMICAL AND PHYSICAL CERTS- DUAL CERT TO BOTH THE AN310-C4 AND L79SC310-0428 SHIP VARIANCE +/- 5% RELEASE NO TW2FOFFH47 TOTAL QUANTITY- 25000 ROHAN JOHNSON/FGH								
<div style="text-align: right;">9,067</div>								
LOT NO.	0502120-280							
QUANTITY	9067							
AREA	3A5							
WEIGHT		BOXES	PREPD	COLL.	CARRIER	BILL OF LADING		FREIGHT CHARGE
53		2		X	Fed Ex Ground			

All parts are shipped free of mercury contamination. All damages exceeding price are excluded.

GREEN NYLON INSERT is a registered trademark of GREER STOP NUT

FREIGHT RECORD

**GREER STOP NUT**

Greer Stop Nut
481 McNally Drive
Nashville, TN 37211

Phone: 615-832-8375
Fax: 615-331-5070
E-mail: greer@spstech.com

CERTIFICATE OF CONFORMANCE

Date of Certification: August 30, 2013

Sold To: B/E Aerospace Consumables Management
9835 NW 14th St
Miami, FL
33172

Purchase Order No: OPFH47

Customer Part No: AN310-C4 Rev. 10 & NASM310 Rev. 1 Item No: 001

Greer Part No: L79SC310-0428 Nomenclature: Nut, Plain, Castellated

Lot No/Serial No: 0502120-280 Qty. Manufactured: 10,954 Qty. Shipped: 9,067

Manufacturing Date: 8-07-13

Material: 303 s/s Material Specification: AMS 5640 U / ASTM-A582-12E1 Material Supplier: CARPENTER

Mill Heat No: 744549 Greer Steel Date: JD990J

Procurement Spec: FF-N-836E Threads: MIL-S-7742 Rev. D Am. 1

Proof Load: 4,080 lbs. Tested To: 4,080 lbs. Sample Size: 4

Non-Destructive Testing: Liquid Penetrant Spec: ASTM E1417-11E1 Sample Size: 29

Fluorescent Penetrant Inspection in accordance with PT2000 Rev. 19 DTD 5/31/12 as modified by PT69811 Rev. 13 DTD 6/25/12

Surface Finish: Passivate Specification: AMS-2700 Mth. 1,CL 4, Rev. E

The products identified on this certificate have been manufactured, tested and inspected in accordance with, and unless noted above, conforms in all respects to the applicable drawings, specifications and/or standards. Complete reports of physical and chemical tests are on file for on-site examination. If no specified customer quality level is required, goods conform to seller's quality level. Reproduction except in full is strictly prohibited without written approval of Greer Stop Nut. All damages exceeding price are excluded. Mercury free clause: We certify that no possibility exists for mercury contamination to occur during manufacture, assembly or testing of parts on this contract. This document relates only to the items tested. Parts were manufactured in the United States of America. Sample plans are carried out to current standard/specification revision.

Product is compliant to DFARS 252.225-7014 ALT 1.

G and Green Nylon are Trademarks of Greer Stop Nut

Fran Glover
Quality Assurance Coordinator

CERTIFICATE OF TESTS
CERT SERIAL# 000868927

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

05/28/13

CUSTOMER / BESTELLER / CLIENT

GREER STOP NUT INC
QUALITY DEPARTMENT
481 MC NALLY DRIVE
NASHVILLE, TN 37211

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 2

RECEIVED
JUN 10 1993

K.S. 6/5/13

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
0013173582	PHL355201 L21739	05/28/13	1080.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE:

744549

UNS NUMBER S30300

PRODUCT DESCRIPTION: CARPENTER STAINLESS TYPE 303 ANNEALED COLD DRAWN
----- PART NUMBER: OR25043

SPECIFICATION: ASTM-A582-12E1 CONDITION A

----- AMS 5640 TYPE 1 REV U (10/ /07)
SPS SPS-M-285 REV H (08/06/97) EXCPT LTR (03/28/07) APPROVED
ASTM-A194-12A GR. 8F/8FA CHEM ONLY

SIZE 0.434000 IN. (11.02 MM) HEX BAR

LOT 1

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.05	1.79	0.56	0.03	0.31	17.35
NI (XRF)	MO (XRF)	CU (XRF)			
8.85	0.35	0.42			

SOLUTION ANNEALED TO PROVIDE A MICROSTRUCTURE FREE FROM CONTINUOUS GRAIN BOUNDARY CARBIDE PRECIPITATION (NETWORK).

IN PRODUCTION OR TESTING OF MATERIAL SHIPPED AGAINST THIS ORDER, NO DIRECT CONNECTED MERCURY MANOMETER, MERCURY PUMPS, MERCURY SEALS, OR MERCURY IN GLASS THERMOMETERS HAVE BEEN USED. NOR IN SUCH PRODUCTION OR TESTING HAS MERCURY BEEN HANDLED IN THE IMMEDIATE VICINITY OF SUCH MATERIAL.

THIS MATERIAL CONFORMS TO THE TECHNICAL REQUIREMENTS OF THE AMS SPECIFICATION REFERENCED ABOVE.

DISCS MACROETCHED AND APPROVED.

MAGNETIC PERMEABILITY <2.00

HARDNESS AS SHIPPED 240HBW (98HRBW)

TENSILE AS SHIPPED, KSI (MPA) 106.0 (731)

ACTUAL SPECIMEN SIZE .433"

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

CONTINUED ON NEXT PAGE

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die angegebenen Daten oder Zertifizierungen.
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

CERTIFICATE OF TESTS
CERT SERIAL# 000868927

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

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05/28/13

CUSTOMER / BESTELLER / CLIENT

SELLER / VERKÄUFER / VENDEUR PAGE 2 OF 2

GREER STOP NUT INC
QUALITY DEPARTMENT
481 MC NALLY DRIVE
NASHVILLE, TN 37211

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL.-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS.-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEMICHT / POIDS
0013173582	PHL355201 L21739	05/28/13	1080.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEUR: 744549 UNS NUMBER S30300
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS
OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO
THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE
REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE
WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE
IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS,
AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER
ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

SHERRY L KREIDER
ADMINISTRATOR - QUALITY
CARPENTER TECHNOLOGY CORPORATION

0R25043

Sherry Kreider

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
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Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
59	2000	EA	NAS1149F0432P		X5925	ANILLO INDUSTRIES	10630		


Jason Lewis
Vice President of Quality

03/06/14

ANILLO Industries, Inc.

2090 NORTH GLASSELL STREET, ORANGE, CA 92865-3391 USA
PLEASE REMIT TO
P.O. BOX 5586 ORANGE, CA 92863-5586 USA
(714)637-7000 (562)924-6632 FAX(714) 637-3022

AS9100
HACAP CP
ISO 9001
CERTIFIED

548903

Packing List & Certification

WE ACCEPT
VISA/MASTER/DISCOVER/AMEX

SOLD TO B/E AEROSPACE, INC. ATTN: ACCOUNTS PAYABLE DEPT. P.O. BOX 025263 MIAMI, FL 33102-5263		1165	SHIP TO B/E AEROSPACE, INC. CONSUMABLES MANAGEMENT 9835 NW 14TH ST MIAMI, FL 33172		E
DATE ORDER REC'D 12/07/2011	ORDER NUMBER 1A1351	INVOICE DATE	SHIPPED VIA FEDXG 033101490	TERMS 1% 10 DAYS, NET 30	
ITEM	ORDERED	SHIPPED	DESCRIPTION		NET WEIGHT

1 4,385,403 **850,000** **NAS1149F0432P**
REV 5 /LOT#X5922/X5925/MIN/MAX /QCR:1,4,6,8,15,16/AN960-416L

ECCN: 9A991 Schedule B#: 7318.22.0000 COO: US NLR

ANILLO IND. (CageCode: 10630)

Part #: NAS1149F0432P

Quantity: 475000

P.O.#: 1A1351

LOT#: X5922

ITEM#: 1 REV. 5

Packed By: MR

ANILLO IND. (CageCode: 10630)

Part #: NAS1149F0432P

Quantity: 375000

P.O.#: 1A1351

LOT#: X5925

ITEM#: 1 REV. 5

Packed By: MR

We certify that: 1. Item number 1 above is manufactured in accordance with the material and processing specifications of this order.
2. We certify that the material on this order conforms in all respects to the current applicable government and/or manufacturer's specification. Test reports are on file and are available for examination on all Anillo manufactured parts. All claims for errors or shortages must be made within 10 days after receipt of goods.
No good to be returned without written authorization. All claims for defective material must filed within 30 days of shipment to receive consideration. We do not assume financial responsibility or liability from the use of products sold, other than the replacement value of the products sold, if claimed within the specified time limit above.

<< R.M.A.# REQUIRED FOR RETURNS >>

Certification

B/E Aerospace, Inc. - Consumables Management

Self Release

Signature and Stamp:

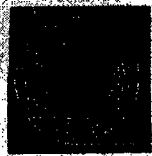
Date: 08-05-13



BY Ben Omidwar
Ben Omidwar, Quality Assurance Manager

FI 4.03.05

CERTIFIED TEST REPORT



Calstrip Steel Corporation

REGISTERED ISO 9001:2000

7140 Bandini Blvd. • Los Angeles, CA 90040-3388
(323)726-1345 • Fax (323)722-8269



Date: 08-05-13
Part Number: NA\$1149F0432P
Lot Number: X5925
Signature: *[Signature]*
Title: Quality Records Clerk

AN960-416L

Customer: HIGHTOWER METAL PRODUCTS Address: P.O. BOX 5586 ORANGE, CA 92613-5586	Order Number: S85378 / W107631 Customer PO: 32413 Shipped Date: 07/22/2013 Packlist ID: 146833
Part ID: H280.1020031-CS Description: CS1020 .031 X 3.630 X COIL Drawing #: H280.1020031 Rev #:	Material Spec: SAE 1020 (DOMESTIC) AMS 5046D

HeatID: 32944

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Ni	Cr	Cu	Mo	Resi
0.1830	0.3890	0.0050	0.0090	0.0100	0.0100	0.0200	0.0220	0.0010	
W	V	Sn	Ti	Al	Ca	Zr	Co	N	B
	0.0010		0.0010	0.0360				0.0060	

MECHANICAL AND PHYSICAL PROPERTIES

Yield	Tensile	Elong %	Hardness	Bend Test
40,100	60,200	28.0	HRB 70	OK
Grain Size	Olsen Test	Spher%	Decarb	Reduct %
7				

Skid Numbers	# of Coils	Weight
W107631-5	4	3,244
W107631-6	4	3,078
W107631-7	4	3,042
	12	9,364

Comment: SOURCE- POSCO (USA)/DFAR COMPLIANT.

All work on this order has been performed in accordance with the Company's Quality Assurance Manual

[Signature]
MARIO VARGAS

Technical Services

Form #:

Print Date: 7/22/2013

Page: 1

Certification

ANILLO INDUSTRIES, INC.
2090 North Glassell st.
Orange, CA. 92865-3391
(714) 637-9110

This is to certify that the below listed parts were processed per the applicable specification listed below.

Test reports and procedures governing this process are on file and subject to examination.

All parts are inspected for plating thickness by use of a X-ray. All instruments are currently calibrated and subject to examination.

CADMIUM PLATE AMS-QQ-P-416

Type	Class	Thickness	Revision
II	2	.000489	C

Job Number: **X5925**

P/N REV.: **5**

Quantity: **510,500**

Visual: **Y**

Part Number: **NAS1149 F 0432 P**

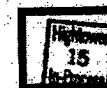
Adhesion: **N**

Description: **AN960-416L**

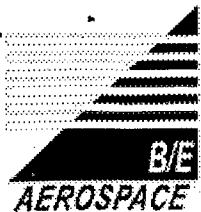
Date: **08/01/13**

Authorized by: **MARIBEL CUEVAS**

Stamp:



FORM # 4.09.117 REV A 05/19/09



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMC
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172


Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	150	EA	212-12		1584198	ALCOA TORRANCE 3014	71286		


Jason Lewis
Vice President of Quality

03/06/14

Alcoa Fastening Systems



Shipper ID: 864279

Page: 1

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 11/30/13
Print Date: 11/30/13
Time: 07:43:06

Ship Via: FED EX
INCO Terms: FCA AFS TORRANCE

Container/Weight:
Carrier Shipment Ref: 864279
Bill Lading #:

SHIP VIA : FED EX

BUYER: EDWARD PANETTA

MATERIAL COMPLIES WITH DFARS 252.225-7009 PREFERENCE FOR DOMESTIC SPECIALTY METALS" WITH ITS ALTERNATE 1

***SHIP VIA FEDX GRD COLLECT ACCT# 0331-0149-0 1A 150 LLS OR MORE SHIP FED

EX FREIGHT ECONOMY COLLECT ACCT# 018757
DO NOT SHIP BY ANY OTHER WITHOUT PROPER WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0 %.

** BAR CODE PER QAP 33 CLAUSE P REQUIRED ***

** QAP 33.0 REV H CLAUSES: A,B,C,E,H,P,U,V. CLAUSE A.3 GENERAL TERMS APPLIES.

REV: B

RELEASE NUMBER: 9G2DOPEM11

Sales Order: F466665 Order Date: 05/14/13 Purchase Order: OPEM11

Remarks: ADILENE

Ln	Item Number	Description	Rev	Qty Shipped	Qty B/O UM
1	BACR11AW2	RECEPTACLE (212-12)		25000.0	0.0 EA
	TSO C148				
	Cust Line #: 1				
	Customer Item: BACR11AW2				
	Required Date: 01/13/14	Promised Date: 01/20/14			
	MFG C OF C CHEM & PHYS TEST REPORT REQ				
	PLEASE DUAL CERT PART NUMBER BACR11AW2 TO PART NUMBERS: HS4430-1,				
	NSA55134-302, BACR11Y2				
	Loc/Lot: S5DD17	1584198		10,010.00	COO: CN

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

**Alcoa
Fastening
Systems**



Shipper ID: 864279

Page: 2

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 11/30/13
Print Date: 11/30/13
Time: 07:43:06

Ship Via: FED EX
INCO Terms: FCA AFS TORRANCE

Container/Weight:
Carrier Shipment Ref: 864279
Bill Lading #:

Ln Item Number Lot/Serial

1 BACR11AW2

Loc/Lot:

S5FLR

1584197

9.912.00

COO: CN

Loc/Lot:

S5T01C

1624303

5.078.00

COO: CN

HTS CODE: 7415290000

SCHEDULE-B NUMBER: 7415290000

ECCN: 9A991

The export classification appears above. You are responsible for all
related export license requirements.

***** Total Qty Shipped:

25,000

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

Alcoa Fastening Systems



Shipper ID: 864279

Page: 1

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MIAMI, FL 33102-5263
USA

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3000 WEST LOMITA BLVD.
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USA

Ship Date: 11/30/13
Print Date: 11/30/13
Time: 07:43:07

Ship Via: FED EX
INCO Terms: FCA AFS TORRANCE

Container/Weight:
Carrier Shipment Ref: 864279
Bill Lading #:

SHIP VIA : FED EX

BUYER: EDWARD PANETTA

PHONE:

MATERIAL COMPLIES WITH DFARS 252.225-7009 PREFERENCE FOR DOMESTIC SPECIALTY METALS" WITH ITS ALTERNATE 1.

***SHIP VIA FEDX GRD COLLECT ACCT# 0391-0149-0 IF 150 LBS OR MORE SHIP FED

EX FREIGHT ECONOMY COLLECT ACCT# 018757 ***

DO NOT SHIP BY ANY OTHER WITHOUT PROPER WRITTEN AUTHORIZATION.

ALLOWABLE SHIPPING TOLERANCE = +0%-0%.

** BAR CODE PER QAP 33 CLAUSE P REQUIRED **

** QAP 33.0 REV H CLAUSES: A,B,C,E,H,P,U,V. CLAUSE A.3 GENERAL TERMS APPLIES.

REV: B

RELEASE NUMBER: 9G2DOPEM11

Sales Order: F466665 Order Date: 05/14/13 Purchase Order: OPEM11

Remarks: ADILENE

Ln	Item Number	Description	Rev	Qty Shipped	Qty B/O UM
1	BACR11AW2	RECEPTACLE (212-12)		25000.0	0.0 EA
	TSO C148				
	Cust Line #: 1				
	Customer Item: BACR11AW2				
	Required Date: 01/13/14	Promised Date: 01/20/14			
	MFG C OF C CHEM & PHYS TEST REPORT REQ				
	PLEASE DUAL CERT PART NUMBER BACR11AW2 TO PART NUMBERS: HS4430-1,				
	NSA55134-302, BACR11Y2				
	Loc/Lot: S5DD17	1584198		10,010.00	COO: CN

CERTIFICATE OF CONFORMANCE

This is to certify that all items noted below were produced in conformance with the contract, drawing specifications, and other applicable documents. All required process certifications, chemicals and physical test reports are on file subject to examination. This document must not be reproduced except in full and relates only to the items tested.

[Signature]
Director of Quality Assurance
Torrance Operations

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

**Alcoa
Fastening
Systems**



Shipper ID: 864279

Page: 2

Sold To: 5574
B/E AEROSPACE, INC.
ATTN: ACCOUNTS PAYABLE
P.O. BOX 025263
MIAMI, FL 33102-5263
USA

Ship To: 55740014
B/E AEROSPACE CONSUMABLES
9835 NW 14TH ST
MIAMI, FL 33172
USA

Shipped From:
AFS -TORRANCE
AEROSPACE PRODUCTS
TORRANCE OPERATIONS
3000 WEST LOMITA BLVD.
TORRANCE, CA 90505
TEL: 310-530-2220
USA

Ship Date: 11/30/13
Print Date: 11/30/13
Time: 07:43:07

Ship Via: FED EX
INCO Terms: FCA AFS TORRANCE

Container/Weight:
Carrier Shipment Ref: 864279
Bill Lading #:

Ln Item Number Lot/Serial

1 BACR11AW2 *** Cont ***
Loc/Lot: S5FLR 1584197 9,912.00 COO: CN
Loc/Lot: S5101G4 1624303 5,078.00 COO: CN
HTS CODE: 7415290000
SCHEDULE-B NUMBER: 7415290000 ECCN: 9A991
The export classification appears above. You are responsible for all
related export license requirements.

***** Total Qty Shipped: 25,000 *****

CERTIFICATE OF CONFORMANCE

This is to certify that all items noted below were produced in conformance with the contract, drawing specifications, and other applicable documents. All required process certifications, chemicals and physical test reports are on file subject to examination. This document must not be reproduced except in full and relates only to the items tested.


Director of Quality Assurance
Torrance Operations

ALCOA GLOBAL FASTENERS, INC.

ALL CLAIMS REGARDING THIS ORDER MUST BE REPORTED TO SELLER PROMPTLY. CLAIMS FOR CREDIT OR REPLACEMENT OF PARTS MAY BE LIMITED TO THOSE PARTS FOR WHICH TRACEABILITY HAS BEEN MAINTAINED BY THE BUYER. ANY CLAIM BASED ON AN ALLEGED DISCREPANCY (IN AMOUNT, QUANTITY, ETC.), BETWEEN THE GOODS ACTUALLY SHIPPED AND / OR DELIVERED UNDER THESE DOCUMENTS AND THE DESCRIPTION THEREOF IN THESE DOCUMENTS, MUST BE MADE IN WRITING TO SELLER NO LATER THAN NINETY (90) DAYS AFTER THE SHIPPING DATE APPEARING HEREON.

CUSTOMER'S COPY

Alcoa Fastening Systems
Torrance Operations

QUARTER TURN PRODUCT CERTIFICATION

The parts contained in this shipment have been manufactured and inspected in accordance with applicable drawings and specifications.

CUSTOMER NAME: B/E AEROSPACE

PURCHASE ORDER NO.: 0PEM11

DATE: 12/03/13

BOEING PART NUMBER: BACR11AW2

CAMLOC PART NO: 212-12

PART DESCRIPTION: RECEPTACLE

PROCUREMENT SPEC. NO: BPS-I-168 REV. B DATED 19 JAN 01

LOT SIZE: 10,010

LOT NO.: 1584198

QTY. SHIPPED: 10,010

SHIPPER NO.: 864279

COMPONENT:	MATERIAL PRODUCER:	MATERIAL TYPE:	HEAT #:
RECEPTACLE	Rapport Metallurgique	Silicon Bronze	Four 28

MECHANICAL PROPERTY RESULTS:

ACCEPT:

REJECT:

ACCEPTANCE DATA:

VISUAL AND DIMENSIONAL REQUIREMENTS:



IN-PROCESS WORK ORDER

HARDNESS AND TORQUE FOR STUDS

TEST DATA SHEET

MINIMUM STOP STRENGTH RECEPTACLES:



TEST DATA SHEET

DEVIATIONS: _____

FINAL SHIPPING AUTHORIZATION:

DATE:

INSP. STAMP:

Jim Perkins

12/3/13



QUALITY ASSURANCE

TWO COPIES WITH EACH SHIPMENT

FORM 082195-2

The test report shall not be reproduced except in full, without the written approval of the laboratory; and the recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.



LE LAITON INJECTÉ

FAVI S.A.

S.A. au CAPITAL de 860 000 €

14 rue Louis Daneux
80490 HALLENCOURT FRANCE

Tél. : 03 22 28 20 50

Fax : 03 22 28 80 83

Tél. International : 33 3 22 28 20 50 / Fax : 33 3 22 28 80 83

e-mail : levi@favi.com

<http://www.favi.com>

RCS d'AMIENS 778151563

DQ 7342

Date/datum : 30/08/2012

AFS-Keiknein, FRE-Camloc GmbH			
Artikel #	MV 212-12/A		
Batch #	22-102542		
	MAT.	OBERFL.	WÄRME.
Zert. A51:	*		
Scanned:		Datum:	

RAPPORT METALLURGIQUE

Metallurgical report / Metallurgischer Bericht

Désignation :	Réceptacle mv 212-12	N°:	18 217	Client/Customer/Kunde
Part/beschreibung n° :	MV 212-12/A	Indice:	4	SAARMETALL
Lot de /batch of/Menge :	Four 28	N° lancement:	12040972 (semaine 35)	
Alliage/Alloy/Legierung :	CU ZN 16 SI 4 - C / (CU ZN 12 SI 4) / ASTM B176			

COMPOSITION CHIMIQUE / Chemical analysis/Chemische Analyse :

Analyses type %

Standard analysis/Standard Analyse

	Maxi	Mini
CU	83,00	78,00
Pb	0,80	/
Sn	0,30	/
Fe	0,60	/
Ni	1,00	/
Al	0,10	/
Mn	0,20	/
Si	5,00	3,00
Zn	Solde	Solde

Analyses sur bain %

Melt analysis/Schmelzofenanalyse

CU	81,10
Pb	0,090
Sn	0,090
Fe	0,080
Ni	0,090
Al	0,010
Mn	0,000
Si	3,89
Zn	Solde

Observations/Remarks/Bemerkungen:

250 000 pièces envoyées le 17/09/2012.

RESPONSABLE QUALITE		RESPONSABLE METALLURGIE	
Date :	17 septembre 2012	Date :	17 septembre 2012
Visa :	J. BESSA	Visa :	Y. HAUTEROUT
Diffusion interne		Qualité	B.E. Fonderie

SPRINT / 78 101 100 101

APR 24642

117 101 100 101 101

Receptacle 1584198

JAN 15 2013

**Alcoa
Fastening
Systems**



3000 W Lomita Blvd
Torrance, California 90505 USA
Tel: 1 310 530 2220
Fax: 1 310 784 4320

Processing Certification

388853

Date

12/03/2013

Lot Number

1584198

Lot Quantity

10010

Part Number

BACR11AW2

Type of Process

**CADMIUM PLATE
TYPE II, CLASS 2**

I.B.M. Number

412391

Specification

AMS-QQ-P-416C

Material Type

S. BRONZE

Mony Barkol

Director of Quality Assurance

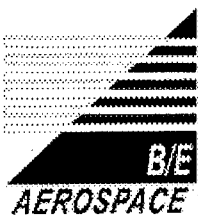


DEC 03 2013

Lab Tech Stamp / Date



Accepted 1584198



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LINE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
13	1	EA	AN310C4		0502120-280	GREER STOP NUT / SPS 27687			

Jason Lewis
Vice President of Quality

03/07/14

GREER STOP NUT

SPS TECHNOLOGIES
481 McNALLY DRIVE • NASHVILLE, TN 37211

PACKING LIST

PACKING LIST

PREVENT FRAUD

Any alteration or misuse of this certificate, or any unauthorized rework or modification of the identified products voids all manufacturer's warranties, and may lead to civil damages and/or criminal penalties.

CUSTOMER NBR 01-0001-00427568-0001

B/E AEROSPACE CONSUMABLES
MANAGEMENT
9835 NW 14TH ST.
MIAMI, FL 33172

THE PRODUCTS THAT ARE COVERED BY THIS AGREEMENT ARE OF U.S. ORIGIN OR OTHERWISE SUBJECT TO U.S. EXPORT AND OTHER FOREIGN TRADE CONTROLS. THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS TO OTHER COUNTRIES OR PARTIES MAY REQUIRE THE PRIOR APPROVAL OF THE U.S. GOVERNMENT. DIVERSION OF THESE PRODUCTS FROM THE AUTHORIZED DESTINATION CONTRARY TO U.S. AND INTERNATIONAL LAW IS PROHIBITED. THE PURCHASER AGREES TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES, OTHER RELEVANT JURISDICTIONS, AND PERTINENT INTERNATIONAL ORGANIZATIONS PERTAINING TO THE EXPORT, DEEMED EXPORT, RE-EXPORT, OR RELEASE OF THESE PRODUCTS. ANY VIOLATIONS OF THIS CLAUSE, AS DETERMINED SOLELY BY SPS TECHNOLOGIES AND OR GREER STOP NUT, SHALL BE DEEMED A MATERIAL BREACH OF THIS AGREEMENT.

CLAIMS FOR GOODS MUST BE MADE ON RECEIPT OF GOODS. NO MATERIAL ACCEPTED FOR RETURN WITHOUT OUR PERMISSION.

PUBLISHED 08/30/13

ORDER NBR 100920-001

ORDER DATE 05/17/13

F/S # 100920001

PAGE 1

B/E AEROSPACE CONSUMABLES
MANAGEMENT (MIAMI)
P O BOX 025263
MIAMI, FL 33102-5263

CUSTOMER P.O.	TERMS	SHIP FROM	SCHEDULE DATE				
OFFH47	N NET 30 DAYS	AI	09/29/13	PO #	OFFH47		
CARRIER CD/DESC	CARRIER NBR	FREIGHT	REG	TERR	CREP	REQ. DATE	
TRK ANY TRUCKING FIRM		COL COLLECT	2751	52	0103	10/11/13	
LNE	PRODUCT CODE	DESCRIPTION	ALTERNATE CODE	QUANTITY	UM	UNIT PRICE	ACT QTY

01 0502120

L79SC310

0428

AN310-C4

25000

C

UNDER 150# SHIP FEDEX GROUND ACCT

#0331-0149-0 MARK COLLECT

OVER 150 LBS SHIP FED EX NATIONAL LTL

ACCT #081757

SHIPPING BOX WEIGHT LIMIT 40 LBS

CHEMICAL AND PHYSICAL CERTS- DUAL CERT TO

BOTH THE AN310-C4 AND L79SC310-0428

SHIP VARIANCE +/- 5%

RELEASE NO TW2FOFFH47

TOTAL QUANTITY- 25000

ROHAN JOHNSON/FGH

9,067

LOT NO.	QUANTITY	AREA	WEIGHT	BOXES	PREPD	COLL	CARRIER	BILL OF LADING	FREIGHT CHARGE
0502120-280	9067	3A5	53	2		X	Fed Ex Ground		

All parts are shipped free of mercury contamination.
All damages exceeding price are excluded.

GREEN NYLON INSERT is a registered
trademark of GREER STOP NUT

FREIGHT
RECORD

**GREER STOP NUT**

Greer Stop Nut
481 McNally Drive
Nashville, TN 37211

Phone: 615-832-8375
Fax: 615-331-5070
E-mail: greer@spstech.com

CERTIFICATE OF CONFORMANCE

Date of Certification: August 30, 2013

Sold To: B/E Aerospace Consumables Management
9835 NW 14th St
Miami, FL
33172

Purchase Order No: OPFH47

Customer Part No: AN310-C4 Rev. 10 & NASM310 Rev. 1

Item No: 001

Greer Part No: L79SC310-0428 Nomenclature: Nut, Plain, Castellated

Lot No/Serial No: 0502120-280 Qty. Manufactured: 10,954 Qty. Shipped: 9,067

Manufacturing Date: 8-07-13

Material: 303 s/s Material Specification: AMS 5640 U / ASTM-A582-12E1 Material Supplier: CARPENTER

Mill Heat No: 744549 Greer Steel Date: JD990J

Procurement Spec: FF-N-836E Threads: MIL-S-7742 Rev. D Am. 1

Proof Load: 4,080 lbs. Tested To: 4,080 lbs. Sample Size: 4

Non-Destructive Testing: Liquid Penetrant Spec: ASTM E1417-11E1 Sample Size: 29

Fluorescent Penetrant Inspection in accordance with PT2000 Rev. 19 DTD 5/31/12 as modified by PT69811 Rev. 13 DTD 6/25/12

Surface Finish: Passivate Specification: AMS-2700 Mth. 1, CL 4, Rev. E

The products identified on this certificate have been manufactured, tested and inspected in accordance with, and unless noted above, conforms in all respects to the applicable drawings, specifications and/or standards. Complete reports of physical and chemical tests are on file for on-site examination. If no specified customer quality level is required, goods conform to seller's quality level. Reproduction except in full is strictly prohibited without written approval of Greer Stop Nut. All damages exceeding price are excluded. Mercury free clause: We certify that no possibility exists for mercury contamination to occur during manufacture, assembly or testing of parts on this contract. This document relates only to the items tested. Parts were manufactured in the United States of America. Sample plans are carried out to current standard/specification revision.

Product is compliant to DFARS 252.225-7014 ALT 1.

G and Green Nylon are Trademarks of Greer Stop Nut

Fran Glover
Quality Assurance Coordinator

CERTIFICATE OF TESTS
CERT SERIAL# 000868927

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

- THE RECORDING OF FALSE, FICTICIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

05/28/13

CUSTOMER / BESTELLER / CLIENT

GREER STOP NUT INC
QUALITY DEPARTMENT
481 MC NALLY DRIVE
NASHVILLE, TN 37211

RECEIVED
JUN 10 2013

X.S. 6/5/13

SELLER / VERKÄUFER / VENDEUR PAGE 1 OF 2

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO. / BESTELL-NR. / N° DE COMMANDE	CARPENTER NO. / WERKS-NR. / N° DE REFERENCE INTERNE	DATE / DATUM / DATE	WEIGHT / GEWICHT / POIDS
0013173582	PHL355201 L21739	05/28/13	1080.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 744549

UNS NUMBER S30300

PRODUCT DESCRIPTION: CARPENTER STAINLESS TYPE 303 ANNEALED COLD DRAWN
----- PART NUMBER: OR25043

SPECIFICATION: ASTM-A582-12E1 CONDITION A
----- AMS 5640 TYPE 1 REV U (10/ /07)
SPS SPS-M-285 REV H (08/06/97) EXCPT LTR (03/28/07) APPROVED
ASTM-A194-12A GR. 8F/8FA CHEM ONLY

SIZE 0.434000 IN. (11.02 MM) HEX BAR LOT 1

PRIMARY HEAT CHEMISTRY (WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN (XRF)	SI (XRF)	P (XRF)	S (COM)	CR (XRF)
0.05	1.79	0.56	0.03	0.31	17.35
NI (XRF)	MO (XRF)	CU (XRF)			
8.85	0.35	0.42			

SOLUTION ANNEALED TO PROVIDE A MICROSTRUCTURE FREE FROM CONTINUOUS GRAIN BOUNDARY CARBIDE PRECIPITATION (NETWORK).

IN PRODUCTION OR TESTING OF MATERIAL SHIPPED AGAINST THIS ORDER, NO DIRECT CONNECTED MERCURY MANOMETER, MERCURY PUMPS, MERCURY SEALS, OR MERCURY IN GLASS THERMOMETERS HAVE BEEN USED. NOR IN SUCH PRODUCTION OR TESTING HAS MERCURY BEEN HANDLED IN THE IMMEDIATE VICINITY OF SUCH MATERIAL.

THIS MATERIAL CONFORMS TO THE TECHNICAL REQUIREMENTS OF THE AMS SPECIFICATION REFERENCED ABOVE.

DISCS MACROETCHED AND APPROVED.

MAGNETIC PERMEABILITY <2.00

HARDNESS AS SHIPPED 240HBW (98HRBW)

TENSILE AS SHIPPED, KSI (MPA) 106.0 (731)

ACTUAL SPECIMEN SIZE .433"

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

CONTINUED ON NEXT PAGE

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die angegebenen Daten oder Zertifizierungen.
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



CERTIFICATE OF CONFORMANCE

CAMLOC CAGE CODE...71286

Customer :	<u>B/E AEROSPACE</u>
Part Number :	<u>212-12</u>
Customer P/N :	<u>HS4430-1 / NSA55134-302 / BACR11Y2</u>
P.O. Number :	<u>0PEM11</u>
Lot Number :	<u>1584198</u>
Quantity :	<u>10,010</u>

This certifies that the above part number was tested in accordance with the quality conformance test proposal for Quarter Turn Panel Fasteners agreed upon by Boeing Corporation and Camloc Products. A sample from the lot was selected at random per MIL-STD-105, Inspection Level S-2, with an AQL of 1.0 percent. The test results for locking torque and unlocking torque are in conformance with Camloc Products design specifications. Tests for stud hardness are in conformance with paragraph 3.5.11 of MIL-F-5591 for alloy steel. Hardness for stud materials other than alloy steels are in conformance with table II of MIL-F-5591, which are in conformance with Camloc Products design specification. Tests for stud materials other than alloy steel are in conformance with Camloc Products design specifications. These reports are on file and available for review.

Quality Assurance

The test report shall not be reproduced except in full, without the written approval of the laboratory; and the recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

CERTIFICATE OF TESTS
CERT SERIAL# 000868927

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



CARPENTER

Carpenter Technology Corporation
101 West Bern Street, Reading, Pa. 19601
Tel: (610) 208-2000 (800) 338-4592

05/28/13

CUSTOMER/BESTELLER/CLIENT

GREER STOP NUT INC
QUALITY DEPARTMENT
481 MC NALLY DRIVE
NASHVILLE, TN 37211

SELLER/VERKÄUFER/VENDEUR PAGE 2 OF 2

CARPENTER TECHNOLOGY CORP

101 W. BERN STREET
READING, PA 19601

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
0013173582	PHL355201 L21739	05/28/13	1080.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULER: 744549 UNS NUMBER S30300
THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS
OPERATIONS QUALITY PROGRAM MANUAL, REVISION 30 DATED 09/28/11.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2010 TO
THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 10-1385R BY PERFORMANCE
REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE
WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE
IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS,
AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER
ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

SHERRY L KREIDER
ADMINISTRATOR - QUALITY
CARPENTER TECHNOLOGY CORPORATION

0R25043

FORM 12-366

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die von gewissen Daten oder Zertifizierungen.
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.

Sherry Kreider



B/E Aerospace, Inc.

Page: 1 of 1

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

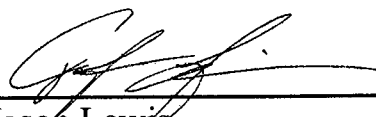
Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO23216

LIN#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
40	246	EA	MS20600AD4W5		87574459	CHERRY AEROSPACE SAN	11815		


Jason Lewis
Vice President of Quality

03/08/14



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: 80321725
Order Date: 04/30/08
Print Date: 12/22/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FA585

Credit Terms: Net 30
Net 30

Ship Via: FEDEX O/N PPD
FOB: Origin - Collect

Remarks:

IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site T Location	Lot/Serial	Qty Open		UM	Promised Shipped	
				Qty	Open			
3	CR9163-4-05		1600			EA	10/14/11	
	Customer Item: MS20600AD4W5							
		G0302	87574459				()	
				25100.0				

TEST REPORTS ENCLOSED = DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

Packing List



CHERRY®
AEROSPACE
SPS Fastener Division, a PCC Company

Cherry Aerospace
1224 East Warner Avenue
Post Office Box 2157
Santa Ana, CA 92707-0157
USA



PACKING LIST

Order No: SO321725
Order Date: 04/30/08
Print Date: 12/22/11

Page: 1



Sold-To: 10015341

Ship-To: 19000244

S O L D T O	B/E AEROSPACE
	PO BOX 025263
	MIAMI, FL 33102-5263
	USA

S H I P T O	B/E AEROSPACE INC C.M.
	10000 N.W. 15TH TERRACE
	MIAMI, FL 33172
	USA

Salesperson (s):110

Purchase Order: 0FA585

Credit Terms: Net 30
Net 30

Ship Via: FEDEX O/N PPD
FOB: Origin - Collect

Remarks:



IF UNDER 150# SHIP FEDEX GROUND COLLECT ACCOUNT# 0331-0149-0
IF OVER 150# SHIP FED EX NATIONAL ACCOUNT# 018757 - DO NOT INSURE
DO NOT PREPAY AND ADD TO ANY OF THE ABOVE METHODS
DO NOT SHIP EARLIER THAN TWO (2) WEEKS PRIOR TO DUE DATE, UNLESS SPECIFIED.

BRITISH AEROSPACE APPROVAL# BAe/AG/30158/MAA to BAe/AG/QC/SC1 PART 3
AIRBUS APPROVAL# 30114

GOODS OF UNITED STATES ORIGIN

FASTENERS ECCN: 9A991d SCHEDULE B# 8803300010
TOOLS ECCN: EAR99 SCHEDULE B# 8467290095

CHERRY DOES NOT ACCEPT QAP33 A.3 ITEM 3

Ln	Item Number	Site T Location/Lot/Serial	Qty Open Qty to Ship	UM	Promised Shipped	
3	CR9163-4-05 Customer Item: MS20600AD4W5 	1600 G0302 87574459	25100.0	EA	10/14/11	

TEST REPORTS ENCLOSED = DO NOT DESTROY

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited

CERTIFICATION

ATTENTION: PURCHASING DEPARTMENT

Quality Assurance Representative

The material and/or parts we are furnishing in this shipment (as shown above) on the subject Purchase Order conform to the order and applicable specifications. Evidence that the material and/or parts meet the specifications and results of all tests for each lot affected will be in our files and will be available for your inspection at any reasonable time.

Signed


DIANE ROA



CHERRY AEROSPACE
SPS Fastener Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report Cherry® Rivet

An ISO9001 and AS9100 registered company. OASIS #8111041606

Part Numbers	Rev	Proc. Spec.	Rev	Lot I.D. No.:	87574459
CR9163-4-05	H	MIL-R-7885	D2	Lot Size:	25,000
				MFG. Date:	December 22, 2011

ASSEMBLY DATA

TYPE	ID #	CERT #	MATERIAL	FINISH	LUBE
Rivet	87574459	A68113	2117-T4 ALUM. ALLOY	MIL-C-5541	Par-90
Stem	87552659	A68111	2017-T4 ALUM. ALLOY	MIL-C-5541	Par-90

W.O. #: 5456298

Final Lube: None

QUALITY CONFORMANCE/ACCEPTANCE RESULTS

MIN REQ'D SAMPLE SIZE SPECS	INSTALLED SHEAR		SPINDLE RETENSION	
	370		15	
	9		9	
			UnLocked	
RESULTS	533	540	84	83
	553		90	
	553		89	
	562		89	
	526		113	
	545		89	
	532		82	
LOAD VALUES IN POUNDS	541		85	

PCS.	ITEM	STATUS	PCS.	ITEM	STATUS
20	EXAMINATION	PASS	13	INSTALLATION (Min and Max Grips)	PASS

Comments:

Blind Fastener

Tr. Rev.:
Rev. Date: 12/22/2011

Inspector
V Iriarte



Insp. Control #:

The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

This test report shall not be reproduced except in full, without the written approval of the laboratory.
The recording of false, fictitious, or fraudulent statement or entries on the certificate may be punished as a felony under Federal law.



CHERRY AEROSPACE
573 Material Division, a PCC Company

1224 East Warner Avenue
Santa Ana, CA 92707-0157



Accredited
Nadcap

Chemical Processing
Heat Treating
ISO/IEC 17025
Material Testing Lab

Final Inspection & Test Report Cherry® Rivet

An ISO9001 and AS9100 registered company. OASIS #6111041606

Lot I.D. No.: 87574459

Rev: -

Customer Parts List

<u>Customer Part Number</u>	<u>Rev</u>	<u>Proc. Spec.</u>	<u>Rev</u>
MS20600AD4W5	-	MIL-R-7885	D2

KAISER ALUMINUM

SHIP TO:

1224 EAST WARNER AVENUE

SANTA ANA, CA 92707-0157

SANTA ANA, CA 92707-0157

SOLD TO: *W. J. ...*

CHERRY AEROSPACE,SPS TECH LLC

ATTN ACCTS PAYABLE

P. O. BOX 2157

SANTA ANA, CA. 92707-0157

Customer PO Number PO125973		NW WORK ORDER NO. 03291		Sharon King	
DESCRIPTION .123 2117H13 TYPE C 22" 100#CL				AUTHORIZED SIGNATURE QUALITY CONTROL MANAGER	
CUSTOMER PART NO.		ALLOY 2117	TEMPER H13	We hereby certify that the material covered by this report has been inspected in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown on this sheet.	
NW PART NO. G123M5			DATE SHIPPED 8/29/2011		
WEIGHT SHIPPED 279					

		ULTIMATE		YIELD		% ELONGATION	
LOT NUMBER	# OF TESTS	STRENGTH K.S.I.		STRENGTH K.S.I.			
		Min	Max	Min	Max		
K847088	1	28.65	28.65				

COMMENTS:
M262.123 REV F
QQA-430C
MILL SOURCE KAISER
MADE IN USA

SEP 23 2011



K847088

[illegible]

A68113

CHEM COMP	ALLOY	SILICON		IRON		COPPER		MANGANESE		MAGNESIUM		CHROMIUM		OTHERS	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	2117		0.80		0.70	2.20	3.00		0.20	0.20	0.50		0.10	0.05	0.15
		NICKEL		ZINC		TITANIUM		LEAD		BISMUTH					
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
					0.25										
ALUMINUM REMAINDER															

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
800 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

Chemical Composition, WT. % (Aluminum Remainder)

Lot		Si	Fe	Cu	Mn	Mg	Cr	Zn
Cast/Drop								
ChemID								
847084								
96-4F2	Act.	0.46	0.43	2.8	0.17	0.40	0.07	0.19
161811								
847088								
95-6F2	Act.	0.50	0.41	2.8	0.15	0.36	0.06	0.12
161638								
Chemical	Min			2.2		0.20		
Limits	Max	0.8	0.7	3.0	0.20	0.50	0.10	0.25
	Others	Each	0.05	*Max		Total	0.15	Max

Specifications

QQA-430

Miscellaneous Notes

Made in USA

SEP 23 2011



Kaiser Aluminum Fabricated
161811
A68113

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 17244

Kaiser Order Number: 624531811

Page 2 of 2

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43058-1088
740-522-1151

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Specifications

QQ-A-430 REV C

Miscellaneous Notes

Made in USA

Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. Actual (Act) chemical composition is from representative samples taken during the ingot casting process. Independent chemical analysis will vary from these values because of natural variation in the process and testing error. This test report shall not be reproduced, except in full, without the written approval of Kaiser Aluminum. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punished as a felony under federal law. Chemical analysis performed in accordance with ASTM E 1251-07. The Newark facility is AS9100B:2004 approved. The Newark Laboratory is NADCAP approved for chemical testing (OES).

SEP 21 2011



A68111
Kaiser Aluminum Fabricated
K848824

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16463

Kaiser Order Number: 624530593

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: K-1013		CUSTOMER PART NUMBER: 6D37L2		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624530593	LINE ITEM: 1	SHIP DATE: 04/20/2011		ALLOY: 2017A	TEMPER: O
WEIGHT SHIPPED: 20580 lbs.	QUANTITY: 88 pcs.	S/L NUMBER: 8943	DIA/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests		WGE %	WGU ksi
846824	3	MIN	27.3	26.0
		MAX	29.3	26.2

Chemical Composition, WT. % (Aluminum Remainder)

Lot Cast/Drop ChemID		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr
846824 21-1F2 160240	Act.	0.48	0.28	4.1	0.60	0.66	0.03	0.16	0.02	0.00
Chemical Limits	Min Max	0.20 0.8		3.5 4.5	0.40 1.0	0.40 1.0	0.10	0.25	0.05	0.05
	Others	Each		0.05	Max		Total	0.15	Max	

Kaiser Aluminum Fabricated
K846824



A68111

SEP 21 2011
322
AUG 11

CERTIFICATION

Kaiser Aluminum & Chemical Corp Inc. ("Kaiser") hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales order acknowledgement form. Any warranty is limited to that shown on Kaiser's standard general terms and conditions.

Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 16463

Kaiser Order Number: 624530593

Line Item: 1

KAISER ALUMINUM FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT
<http://Certs.KaiserAluminum.com>

Kaiser Aluminum & Chemical
600 Kaiser Drive
Heath, OH 43056-1088
740-522-1151

CUSTOMER PO NUMBER: FLO-1041-ALLFAST		CUSTOMER PART NUMBER: 6G37L1		PRODUCT DESCRIPTION: ALY-JUMBO	
KAISER ORDER NUMBER: 624531811	LINE ITEM: 1	SHIP DATE: 05/27/2011	ALLOY: 2117	TEMPER: O	
WEIGHT SHIPPED: 40609 lbs.	QUANTITY: 176 pcs.	B/L NUMBER: 9329	DIAM/DAF/THKNS: 0.375 in.	WIDTH: 0.000 in.	LENGTH: 0.0 in.
SHIP TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630			SOLD TO: FLORENCE 1547 HELTON DRIVE FLORENCE, AL 35630		

Test Code: 8000

Actual Physical Properties

Lot No.	No. Tests	WGU ksi
847084	3	MIN 22.9 MAX 23.0
847088	2	MIN 22.8 MAX 23.0

SEP 23 2011



Kaiser Aluminum Fabricated
KSA1088



A68113

CERTIFICATION

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Warren Marcucci, Technical Manager

Warren Marcucci

Plant Serial: 17244

Kaiser Order Number: 624531811

Line Item: 1